



# Project Scope Summary Report

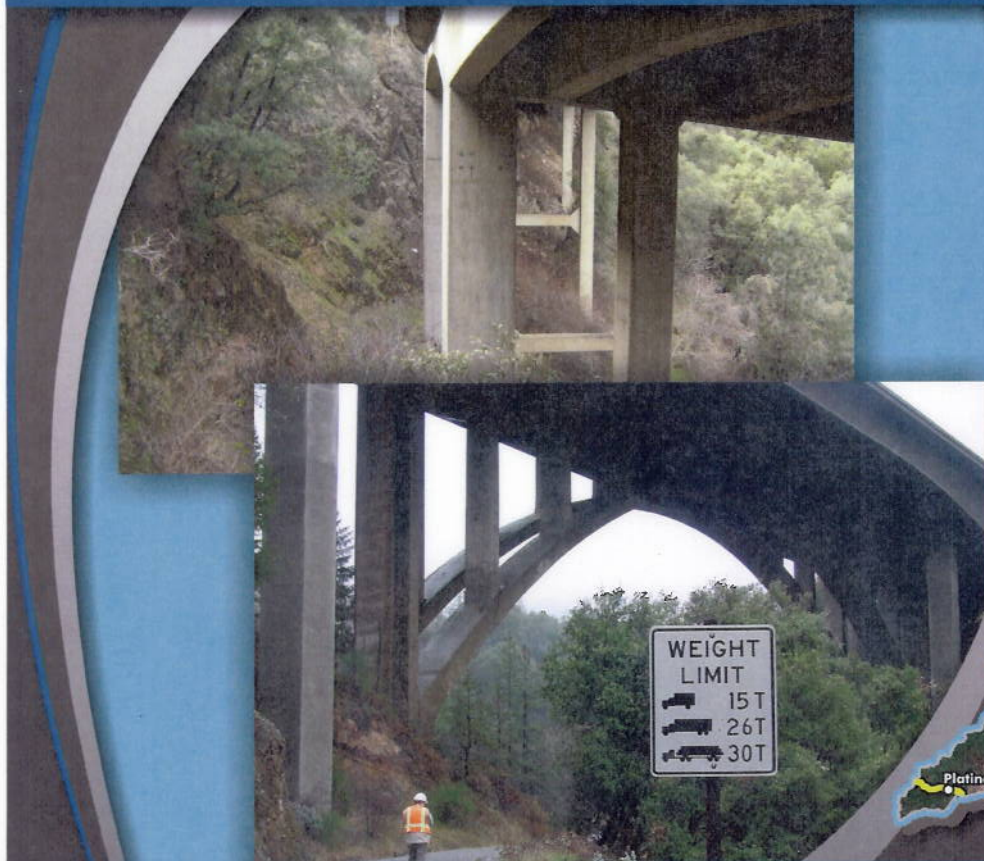
Seismic Retrofit Dog Creek Bridge #06-0027 and  
bridge replacement of Sidehill Viaduct #06-0042L

02-SHA-5  
PM 45.5  
PM 29.5/30.0  
20.XX.201.110  
20.XX.201.113  
PPNO 3346  
02 0000 0016  
02-0E090\_  
August 2011

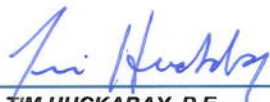


## PROJECT LOCATION

In Shasta County  
about 8 and 24  
miles north of  
Shasta Lake at  
Sidehill Viaduct and  
Dog Creek Bridge

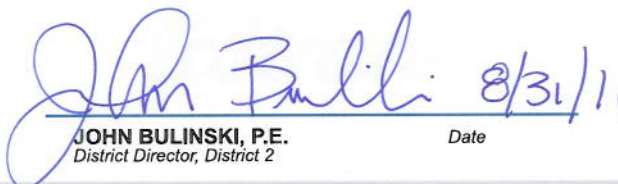


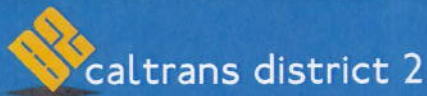
### Approval Recommended:

  
**TIM HUCKABAY, P.E.**  
Project Manager, District 2  
8-30-11  
Date

  
**ED LAMKIN, P.E.**  
Deputy District Director  
Maintenance and Operations, District 2  
SHOPP Program Manager  
8-31-11  
Date

### Approved By:

  
**JOHN BULINSKI, P.E.**  
District Director, District 2  
8/31/11  
Date









This Project Scope Summary Report has been prepared by the following Registered Civil Engineer. The Registered Civil Engineer attests to the best of his knowledge the technical information contained therein and has judged the qualifications of any technical specialists providing engineering data upon which recommendations, conclusions and decisions are based.



Oscar Cervantes  
Oscar Cervantes, P.E.  
Registered Civil Engineer

8-30-11  
Date

## PROJECT SCOPE SUMMARY REPORT FOR BRIDGE REHABILITATION AND BRIDGE SEISMIC RESTORATION PROJECT

### Summary information for Sidehill Viaduct and Dog Creek

This Project Scope Summary Report (PSSR) proposes to replace Sidehill Viaduct and seismic retrofit Dog Creek Bridge on Interstate 5 in Shasta County.

<b>Capital Costs:</b>		<u>Current</u>
		\$ 24.2 million
<b>Structures:</b>		\$19.9 million
<b>Roadway:</b>		\$ 4.3 million
<b>Right of Way Costs:</b>		\$75,550
<b>Support Costs:</b>		\$6.2 million
<b>Funding Source:</b>		2012 SHOPP
<b>Number of Alternatives:</b>		5 plus no build
<b>Recommended Alternative:</b>		Alternative 4 for Sidehill Viaduct and Alternative 1 for
<b>For funding purposes</b>		Dog Creek Bridge
<b>Type of Facility:</b>		Interstate
<b>Program Year</b>		2016
<b>Project Program:</b>		20.XX.201.113
<b>Anticipated Environmental Clearance Document:</b>		Initial Study/Negative Declaration (CEQA), Finding of No Significant Impact (NEPA)
<b>Construction Year:</b>		2016
<b>PM Limits:</b>		02-SHA-5 PM 29.5/30.0 Sidehill Viaduct 06-0042L 02-SHA-5 PM 45.5 Dog Creek Bridge 06-0027
<b>Legal Description</b>		In Shasta County about 8 and 24 miles north of Shasta Lake at Sidehill Viaduct and Dog Creek Bridge
<b>Working Days:</b>		335 working days (2 seasons) for Sidehill Viaduct and 225 working days for Dog Creek Bridge(1 season) concurrently



- 2) Bridge Rail Replacement (201.112) 790 LF
- 3) Transportation Management System (201.315) Replace/relocate existing closed circuit TV (CCTV) and changeable message sign (CMS)
- 4) Collision Severity Reduction (201.015) realignment of curve south of the structure is expected to reduce collisions by 13.

## 2. RECOMMENDATION

Alternative 4 (Bridge Replacement) was chosen for Sidehill Viaduct as the preferred alternative for funding purposes. The new structure would be a parallel structure on a new alignment just east of the existing structure. It would provide a 60 MPH design speed versus a current 50 MPH design speed. Also the roadway realignment south of the new structure will improve the design speed to 60 MPH versus a current design speed of 55 MPH. This alternative would also provide increased worker safety during construction since traffic will remain on the existing alignment for the majority of the work.

## 3. PURPOSE AND NEED STATEMENT

### Need:

This bridge work is needed for the following reasons:

- The bridge does not meet seismic strength requirements.
- The current bridge design speed of 50 mph is not consistent with adjacent segments of freeway.
- The total accident rate for Sidehill for the period 7/1/2003 to 6/30/2006 was 8 times the Average Accident rate.
- Drainage issues occur since superelevation has been reduced on the bridge deck. This has reduced drainage capacity. This then creates sheet flow concerns on the roadway located south of the bridge.
- The existing bridge rail does not meet current standards.
- The existing structure is 70 years old and is reaching the end of its useful life.

### Purpose:

The project proposes to address structure quality and it will improve the seismic character of structure. The bridge is located on a site that can expect a peak bedrock acceleration of 0.5g during a Maximum Credible Earthquake (MCE) Magnitude of 6.0 (richter scale). The proposed retrofit design is based on seismic safety performance criteria for an ordinary bridge that will allow the existing structure to undergo significant damage, but with minimum risk of collapse. The bridge would require limited service (e.g. lane closures, light emergency traffic) within days of the earthquake. Full service is restorable within months.

The purpose of this project is to enhance safety for drivers and bicyclists. Improve superelevation and improve drainage improvements on the bridge. Improve design speed on the structure and improve design speed for the curve just south of the structure. This will be consistent with adjacent segments of the freeway. Improve safety by reducing collisions on the structure and on the curve south of the structure.

## Sidehill Viaduct Bridge Replacement Section

### 1. INTRODUCTION

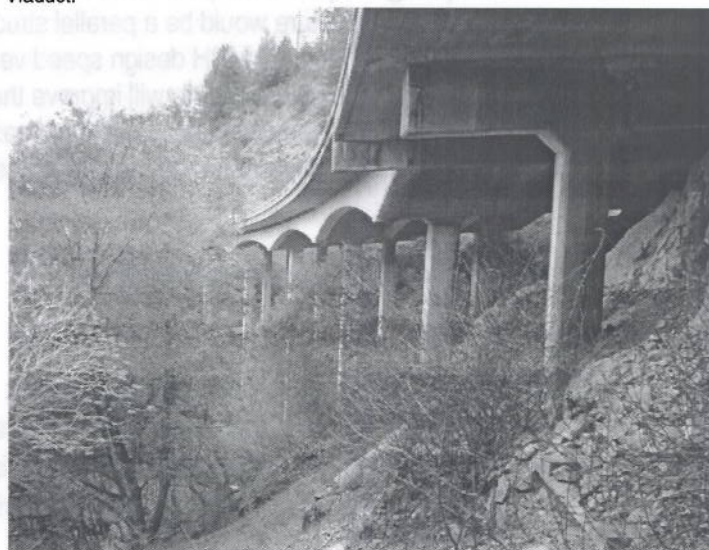
This Project Scope Summary Report (PSSR) proposes to replace Sidehill Viaduct on Interstate 5 in Shasta County.

<b>Capital Costs:</b>	<u>Current</u>
	\$ 19.2 million
<b>Structures:</b>	\$ 15.6 million
<b>Roadway:</b>	\$ 3.5 million
<b>Right of Way Costs:</b>	\$42,750
<b>Funding Source:</b>	2012 SHOPP
<b>Number of Alternatives:</b>	4 plus no build
<b>Recommended Alternative:</b>	Alternative 4
<b>Type of Facility:</b>	Interstate
<b>Program Year</b>	2016
<b>Project Program:</b>	20.XX.201.113
<b>Anticipated Environmental Clearance Document:</b>	Initial Study/Negative Declaration (CEQA), Finding of No Significant Impact (NEPA)
<b>Construction Year:</b>	2016
<b>PM Limits:</b>	02-SHA-5 PM 29.5/30.0
<b>Legal Description</b>	In Shasta County 8 miles north of Shasta Lake at Sidehill Viaduct (06 -0042L)
<b>Working Days:</b>	335 working days (2 seasons)

#### Performance Measures:

- 1) Bridge Replacement (201.113): 1 new bridge

Sidehill Viaduct is located west of Shasta Lake and Tunnel Gulch Sidehill Viaduct.



This photo is looking southbound. The proposed new bridge will be located on the east side in this photo of the existing structure based on this view.



## 4. EXISTING FACILITY, DEFICIENCIES AND TRAFFIC DATA

### 4A. ROADWAY GEOMETRIC INFORMATION

The outside shoulder is currently considered to be a bike route and will be perpetuated as a Class 3 bike route.

	Facility (1)	Minimum	Through Traffic Lanes (2)			Paved Shoulder Width (3)		Median (4)	Shoulder is a Bicycle Lane (Y/N) (5)	Other Bicycle Lane Width (6)	Bicycle Route (7)
	Location	Curve Radius	No. of Lanes	Lane Width	Type (Flex, Rigid, or Composite)	Left	Right	Width	Width	Width	(Y/N)
Exist	PM 29.5/300.0	700 & 900	2	12	Flex	5	10	NA	Y	NA	Y
Prop	**PM 29.5/30.0	1160 & 1160	2	12	Flex	5	10	NA	Y	NA	Y
	Min. 3R Stds.	1150(60 mph)									

### 4B. Condition of Existing Facility

Pedestrian Facility Data:

The outside shoulder of the existing bridge serves as a bike route. It meets ADA width requirements. The existing bridge rail does not meet bicycle rail standards.

### 4C. STRUCTURES INFORMATION

Structures	Width Between Curbs			Replace Bridge Railings	Vertical Clearance			Work Identified in STRAIN	Replace Bridge Approach Rail	Replace Bridge Approach Slab	
Name/No.	Exist	3R Std	Prop	(Y or N)	Exist	3R Std	Prop	(Y or N)	(Y or N)	(Y/N)	#
06-0042L	39'	NA	39'	Y	NA	NA	NA	N	Y	Y	2

### 4D. VEHICLE TRAFFIC DATA

1. Design Data (southbound only):

Present Average Daily Traffic (ADT):	9,600
10 Year ADT:	14,800
10 Year Design Hourly Vehicles (DHV):	3,600
% Trucks:	30

Traffic Index (10 Year): 12.5

2. Accident Data for Sidehill Viaduct PM 29.75 (7/1/03 to 6/30/06):

#Accidents (Total/Fatal/Injury)	Accident Rates for 0.5-mi segment (acc/mvm)			
	Statewide Average		ACTUAL	
	Fatal+Injury	Total	Fatal + Injury	Total
22/1/3	0.21	.50	0.73	4.00

**General Accident Analysis:** Due to rehabilitation work on the Pit River Bridge (PM 28.2) in 2007/2008 and a curve widening project in 2009, the traffic control time frame collision data is not representative of pre-construction collision data for the Sidehill Viaduct location. The time period chosen was between July 2003 and June 2006. Prior to the Pit River Bridge Project, the Total Accident Rate for the Sidehill Viaduct is eight times the Average Total Accident rate. The accident history indicates a concentration of accidents on or at the downhill end of the structure. With the noted accident issues and above mentioned deficiencies, the District's recommendation is to replace the bridge.

**Safety Review Recommendations:** District 2 Traffic Operations personnel reviewed the project limits on the Caltrans Photolog on March 25, 2008. The following safety improvements are incorporated into the project:

- Existing guardrail end treatments will be upgraded to meet current standards (NCHRP 350).
- Metal Beam Guard Railing Transition Railing (Type WB) will be installed on the entrance bridge.
- Recessed reflective pavement markers will be placed on the new AC pavement.
- A concrete barrier Type 736 with tubular bicycle railing will be used.

## 5. CORRIDOR AND SYSTEM COORDINATION

The project is consistent with state and local transportation plans and programs. The 2004 Shasta County Regional Transportation Plan (RTP) addresses the need for *seismic retrofit and/or replacement of the Dog Creek Bridge*. During the 2009 update of the Shasta County RTP, the Sidehill Viaduct has been listed as a needed bridge improvement. The current facility for these two structures is a 4-lane freeway with 12-foot lanes, 10-foot outside shoulders, and 5-foot inside shoulders. The concept of 4-lanes, 10-foot outside shoulders and 5 foot inside shoulders is consistent with the twenty year and beyond concept in the June 2008 I-5 Transportation Concept Report.

## 6. RECOMMENDED ALTERNATIVE FOR PROGRAMMING

### 6A. Replacement Strategy (Alternative 4):

It is proposed to construct a new Cast-in-Place Pre Stressed (CIP/PS) Box Girder structure on a parallel alignment east of the existing structure. This alternative includes the following:

- New structure: 900 feet long; 41.8 feet wide
- 1740 feet of new roadway connecting to the structure



- Demolition of the existing structure
- Design speed on new structure improved to 60 MPH
- Roadway realignment south of new structure to improve design speed to 60 MPH
- Improvement of design speed for structure and curve south of structure will be consistent with adjacent segments of the freeway
- Grade of the proposed parallel structure is 3% (vs. 6% for existing structure) which reduces stopping sight distance

A new structure on a parallel alignment can be constructed with minimal impact to traffic on I-5. Existing capacity can be maintained throughout most of the bridge construction; with only temporary lane closures required to tie-in the new structure to the roadway. Further truck passage through the workzone will not be affected by this alternative.

## **6B. DESIGN EXCEPTIONS**

There are no design exceptions for the proposed new structure and pavement realignment (Alternative 4).

## **6C. ENVIRONMENTAL COMPLIANCE**

The anticipated environmental compliance document is an Initial Study/Negative Declaration to comply with the California Environmental Quality Act (CEQA) and a Categorical Exclusion with the National Environmental Policy Act (NEPA). Environmental compliance will not occur until a complete Environmental Study Request (ESR) with adequate mapping is submitted to Environmental Management and appropriate environmental studies are completed. A minimum 18 to 24 month lead time for environmental studies is anticipated prior to Project Approval and Environmental Document (PA&ED). This assumes there are no sensitive resources within the project limits and the overall workload allows meeting the 18 to 24 months to obtain environmental compliance.

The project area has a moderate sensitivity for architectural resources. The project area has a low sensitivity for pre-historic or historic archaeological resources. Bat surveys will be required. A tree removal window will likely apply from September 1 – March 15. Timber fees may be associated with tree removal. There is one jurisdictional stream channel east of the proposed new alignment, but it appears to be outside of the project limits. Permits will not be required if jurisdictional waters are avoided.

## **6D. HAZARDOUS WASTE:**

This route should not have Aerial Deposited Lead (ADL) concentrations in excess of the allowable threshold. This project may have Asbestos Containing Material (ACM). Thermoplastic/Paint Stripe/Pavement Marking removal concurrent with removal of AC will also require a lead compliance plan. This will be necessary when existing roadway is obliterated. A task order will be required during design to survey for ACM and ADL concentration.

Treated wood is present within the project limits in the form of MBGR. Treated wood waste (TWW) may not be relinquished to the contractor and must be disposed of at an appropriately permitted disposal facility or reused in an appropriate manner on the project. In addition to disposal, regulations specify the manner in which TWW must be stored while awaiting disposal.



A geologic evaluation regarding Naturally Occurring Asbestos (NOA) was conducted within the project limits. The evaluation does not indicate the presence of rock commonly associated with NOA.

There is no Cortese List location within the project limits.

#### **6E. OTHER AGENCIES INVOLVED:**

The project will require coordination with the United States Forest Service and a Special Use Permit may be needed. Sidehill Viaduct project should not have any impacts to jurisdictional waters therefore; no permits (401, 404, and 1602) will be required.

#### **6F. MATERIALS AND/OR DISPOSAL SITE NEEDS AND AVAILABILITY:**

A material disposal site will not be required. The intent is to obliterate the existing roadway since we will be building a parallel structure and realigning the roadway. On the realigned section there will be roadway excavation and it could be used at the bridge abutment area as fill.

Removal of the bridge will be performed by the contractor and will be addressed in the special provisions. The special provisions should address issues as recycling of concrete and protection of the railroad Tunnel # 3 below the existing bridge.

During the design stage, location of the staging area for the concrete plant needs to be considered.

#### **6G. HIGHWAY PLANTING AND IRRIGATION:**

There will be no planting and irrigation required on this project.

#### **6 H. ROADSIDE DESIGNS AND MANAGEMENT:**

Replace/relocate existing closed circuit TV (CCTV) and changeable message sign (CMS) due to construction of new parallel bridge.

#### **6I. STORMWATER COMPLIANCE:**

Construction Site Best Management Practices (BMP's) will be determined during the project design phase. Of note, the project area is located in the Lake Shasta Drainage area which drains into Shasta Lake. The Central Valley Regional Water Quality Control Board (RWQCB) has established a Total Maximum Daily Load (TMDL) for Shasta Lake (area where West Squaw Creek enters) and Horse Creek (Rising Star Mine to Shasta Lake) for cadmium, copper, and zinc with no Implementation plan or monitoring plan established to date. This project is not likely to adversely impact these constituents of concern. There is no jurisdictional water at the project site.



## 6J. RIGHT OF WAY ISSUES:

Three utility companies will require verification: AT&T, PG&E and Pacific Power. No conflicts are expected.

Trees are expected to be removed. Any timber removed will need to be paid for prior to removal. The value of the timber is estimated to be \$10,000.

## 6K. RAILROAD INVOLVEMENT:

Coordination is anticipated with the Union Pacific Railroad (UPRR) since their Tunnel # 3 is located below and crosses perpendicular to Sidehill Viaduct. However the openings to the tunnel are outside of the areas needed for construction. Plan review by the UPRR will be required.

## 6L. SALVAGING AND RECYCLING OF HARDWARE:

The contractor will be required to salvage all appropriate materials.

## 6M. WHAT ARE THE CONSEQUENCES OF NOT DOING THIS ENTIRE PROJECT

The bridge will continue to not meet seismic retrofit requirements. The bridge design speed of 50 MPH will still not be consistent with adjacent segments of freeway. Drainage issues will continue on the bridge and just south of the bridge. Accident rates will not be improved without this project.

## 6N. ALTERNATIVES STUDIED, COSTS AND REASONS NOT RECOMMENDED:

Three potential alternatives plus no build were studied for the Sidehill Viaduct location and are not recommended:

The No-Build alternative: This alternative was considered and rejected because seismic deficiencies would still exist on the structure and safety issues would not be improved.

Alternative 1: Seismic Retrofit plus additional structure improvements to extend life for approximately 15 years. (construction cost \$4.9 million)

1. Retrofit of existing columns of Bents 3, 4, 5, and 6 with Steel Jacketing
2. Retrofit existing footings of Bents 3, 4, 5, and 6 and provide footing tie-downs
3. Reconstruct hinge seat at south end of bridge (*Requires temporary Supports*)
4. Remove existing asphalt concrete wearing surface and replace with  $\frac{3}{4}$ " polyester concrete overlay (*Restores deck to 10% Superelevation*)
5. Retrofit Bent 2 and Bent 7 with new Cast-in-Drilled-Hole (CIDH) concrete piles
6. Retrofit existing link beams



This alternative does not provide good value since the bridge is approaching the end of its useful life. Also the bridge and the curve south of the bridge design speed would not be improved by maintaining the existing alignment. The existing design speed is not consistent with adjacent segment of the freeway which may contribute to increased collisions.

**Alternative 2: Seismic Retrofit** (alternative 1) plus additional design and safety improvements (construction cost \$5.6 million)

1. Removal of existing bridge rail
2. Construction of new Type 732 Bridge Rail with Tubular Bicycle rail
3. Installation of W1-4 Signage
4. Installation of electronic signage with in-pavement sensors

This alternative does not provide good value since the bridge is approaching its useful life. Also the bridge and the curve south of the bridge design speed would not be improved by maintaining the existing alignment. The existing design speed is not consistent with adjacent segment of the freeway which may contribute to increased collisions.

**Alternative 3;** Replaces the bridge on existing 405 foot alignment (construction cost \$13.1 million). Initial design expectations are for three spans of CIP/PS Box Girders with two-column bents on Large Diameter (6-foot) CIDH piling. Actual design may vary. The new structure will be standard except it maintains the existing 50 mph design. It requires two-stage construction to maintain one lane of SB traffic on this alignment Design speed of roadway south of new structure remains at 55-MPH

This alternative does not provide good value. The bridge and the curve south of the bridge design speed would not be improved by maintaining the existing alignment. The existing design speed is not consistent with adjacent segment of the freeway. Undesirable items that would result with this alternative are traffic congestion, worker safety and traffic controls costs.

## **7. TRANSPORTATION MANAGEMENT:**

### **7A. Transportation Management Plan Data Sheet Summary See Attachment D**

- The bi-directional 2008 Annual Average Daily Traffic is 19,600. The southbound traffic weekday peak hourly volume is 997 and the weekend peak hourly volume is 1186.
- Portable Changeable Message Signs (CMSs) are recommended for Std Plan T-10 lane closures on I-5 due to the high approach speeds.
- The need for construction zone enhancement enforcement program (COZEEP) and /or a temporary speed zone reduction should be determined by the Project Engineer with the Construction Engineer and the Office of Safety Investigations Chief.
- Project specific and general media releases, and worker safety media campaigns shall be funded and implemented.

A transportation management plan for this project is required and should be requested when the design is complete enough to determine specific traffic impacts, but early enough to make design changes/additions



## 7B. Vehicle Detection Systems

The existing CCTV and CMS need to be replaced/relocated to accommodate the new alignment.

## 8. ENVIRONMENTAL DETERMINATION/DOCUMENT

The anticipated environmental compliance document is an Initial Study/Negative Declaration to comply with the California Environmental Quality Act (CEQA) and either a Categorical Exclusion or Environmental Assessment/Finding of No Significant Impact (FONSI) with the National Environmental Policy Act (NEPA).

## 9. FUNDING/SCHEDULE

### 9A. COST ESTIMATE

Estimated Costs (2011 \$)

<u>Structures</u>	<u>Roadway</u>	<u>R/W</u>
\$ 15.6 million	\$ 3.5 million	\$42,750

**Total Estimated Construction Cost \$ 19.1 million**

Note project support and project schedule is included in the Dog Creek Section which combines Sidehill Viaduct replacement and Dog Creek Bridge seismic retrofit work.

## 1. INTRODUCTION (Dog Creek Bridge Section):

This Project Scope Summary Report (PSSR) proposes to seismic retrofit , Dog Creek Bridge (06 0027)

<b>Capital Costs:</b>	\$ 5.2 million
<b>Structures:</b>	\$ 4.3 million
<b>Roadway:</b>	\$ 0.9 million
<b>Right of Way Costs:</b>	\$ 32,800
<b>Number of Alternatives</b>	1 plus no build
<b>Recommended Alternative</b>	Alternative 1
<b>Funding Source:</b>	2012 SHOPP
<b>Type of Facility:</b>	Interstate
<b>Project Program:</b>	20.XX.201.113
<b>Anticipated Environmental Clearance Document:</b>	Categorical Exemption / Categorical Exclusion
<b>Construction Year:</b>	2016
<b>PM Limits:</b>	02-SHA-5 PM 45.5
<b>Performance Measure:</b>	Bridges
<b>Performance Indicator:</b>	Seismic Restoration
<b>Description &amp; Outcome:</b>	1bridge
<b>Working Days</b>	225 Working Days



At the Dog Creek Bridge location there are two bridges, which were built 33 years apart.

Retrofit to enhance ability of bridge to withstand seismic events.  
 Structure rehabilitation of joint seals, columns, abutments and bent caps to preserve serviceability of structure

## 2. RECOMMENDATION:

It is recommended to approve Alternative 1 for programming and funding. The project is to perform seismic work on Dog Creek Bridge 06-0027.



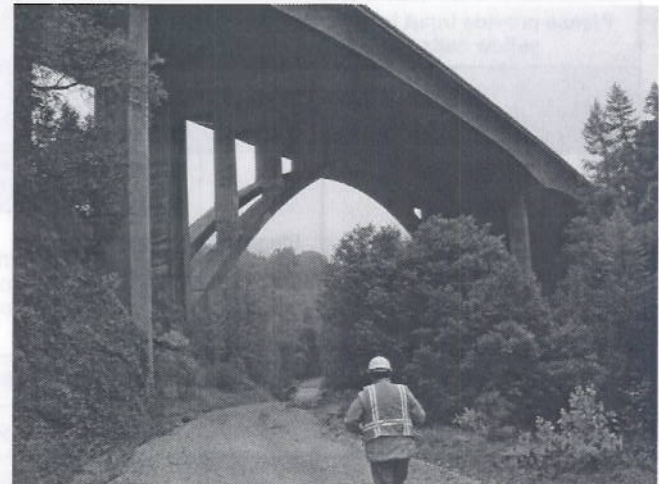
### 3. LOCATION AND PROBLEM:

#### Dog Creek Bridge 06-0027

02-SHA-005-PM 45.5

Structure Conditions: BIRIS, dated 05/17/10 stated the following (see BIRIS for full Text, Attachment G): Abutment 1 right wing wall has rotated approximately 50mm outward from abutment. Compression seal at north abutment in northbound lane at abutment 8 has failed in adhesion. The multilayer polymer concrete overlay in the southbound lanes is delaminating in a few areas. A few have up to 10 mm wide cracks spaced 1 m apart in the approach slab (due to edge spalling). Work recommended include replace the compression type joint seal at abutment 8 in the northbound lanes. On southbound deck grind off the polymer overlay and place a 20 mm thick polyester concrete overlay. On the northbound lane deck place 20 mm thick polyester overlay on existing 76 mm reinforced concrete overlay. Seismic retrofit work (column shells) was identified in the STRAIN, July 2002.

Project EA 02-2C450, Sha 5 PM 44.4/58.0, is an asphalt concrete resurfacing project scheduled to start construction the summer of 2011. It involves the following work on Dog Creek bridge (northbound and southbound decks): removal of unsound concrete, work on the approach slabs, joint work and placement of polyester overlay.



Dog Creek Bridge from Ferry Fenders Road.  
 Dog Creek Bridge looking south underneath the structure.

### 4. PROPOSALS:

#### Dog Creek Bridge 06-0027

02-SHA-005-PM 45.54

Alternative 1 Proposed Work:

Perform seismic retrofit per Advance Planning Study (APS). Seismic retrofit work includes: retrofitting bent caps, pier caps and spandrels, saw cutting existing spandrel, and installing sliding polytetrafluoroethylene (PTFE) bearings.



This is the District's preferred alternative since it would correct seismic concerns as noted in BIRIS.  
 No build: No construction improvements would occur and therefore there is no capital cost. The bridge would still be seismic deficient.

**5. COST ESTIMATES:** Estimated Costs (2011 \$)

<u>Structures</u>	<u>Roadway</u>	<u>R/W</u>	
\$ 4.3 million	\$ 840,000	\$32,800	<b>Total Construction Cost \$ 5.2 million</b>

**PROJECT SCHEDULE:** The following table outlines the estimated PY (person year) effort and other support costs. These PY's and support costs are based on the programming schedule shown below. Dollar costs are shown in \$1000's. These PY's and support costs are based on the programming schedule shown below.

NOTE		CAPITAL & SUPPORT COSTS BY PROGRAM AND PROJECT FUNDING COMPONENT (Dog Hill)						
Please provide input to all yellow cells								
Program	Component	"Baseline" (Original Identified Hours and Funding)						
EA 02-0E090 EFIS 0200000016		Planned (Hours)	Loaded Rate Estimate (\$/Hr.)	Program Funding by Component (x1000)			Total Component Funding	Support/ Capital (%)
				Prior Allocati on	Initial Programming Expectation			
					Direct Charges	Indirect Charges (ICRP)		
201.110	PA&ED	12,000	\$91.00	\$0	\$727	\$365	\$1,100	3.85%
201.110	PS&E	21,000	\$96.00	\$0	\$1,341	\$675	\$2,100	7.34%
201.110	R/W	1,100	\$80.00	\$0	\$59	\$29	\$90	0.31%
201.110	CON	31,000	\$93.00	\$0	\$1,918	\$965	\$2,900	10.14%
SUPPORT SUBTOTAL		65,100		\$0	\$4,044	\$2,035	\$6,190	21.65%
		Baselin e	Escalation	Program Funding Total	low support ratio is based on bottoms-up input from core functions historical comparisons!  PPM Deputy Directors Initials <u>          <i>SC</i>          </u>			
201.110	R/W Capital	\$76.0	\$16.4	\$96				
201.110	Construction	\$19,840	\$2,927	\$22,770				
201.110	Con Contingencies	\$4,960	\$732	\$5,700				
201.110	Con Capital total	\$24,800	\$3,659	\$28,500				
CAPITAL SUBTOTAL		\$24,876	\$3,675	\$28,596				
TOTALS				\$34,786				
Rate Information		Input	RANGE	Historic Program Support/Capital Cost Data (%)				
Capital Contingency Rate %		25%		Lowest Similar Project		60%		
ICRP Rate %		33.47%		Highest Similar Project		92%		
Escalation Rate Construction		3.50%		Average Similar Project		70%		



Escalation Rate R/W	5.00%	Cumulative 2012 SHOPP Support/Capital	24.1%
# of years to escalate	4		

The following tables show a programming schedule. All commitments for time of delivery should assume that no work would commence until after the projects are programmed.

PROJECT SCHEDULE					
M000	ID Need		M275	General Plans	
M010	Approve PID	Aug 31, 2011	M377	P & E to R.O.E.	5/1/2015
M015	Program Project	April, 2012	M378	Draft Struct. PS&E	4/1/2015
M020	Begin Envir. Doc.	8/15/2012	M380	HQ PS&E	6/1/2015
M040	Begin Project	7/1/2012	M410	Right of Way Cert.	8/1/2015
M120	Circ. Draft ED		M460	Ready to List	10/1/2015
M200	PA & ED	7/1/2013	M480	Advertise	1/1/2016
M221	Bridge Site Submit	8/1/2013	M500	Approve Contract	3/1/2016
M224	Right of Way Maps	8/1/2013	M600	Accept Contract	1/1/2020
M225	Reg. Right of Way	8/1/2013	M700	Final Report	1/1/2022

## 7. PROJECT FACTORS:

Upgrade of existing northern access route is required for seismic work on the north end of the structure. On the south side of the structure existing slopes are very steep, so material for seismic work for columns has to be brought down from above the bridge by construction workers. Lane closures may be required for equipment to place concrete over the side of the bridge to retrofit bent and pier caps. A support column may be required for removal of the spandrel column in the middle of the bridge.

### FUNCTIONAL UNITS

**Environmental:** The anticipated environmental compliance document is an Initial Study/Negative Declaration to comply with the California Environmental Quality Act (CEQA) and a Categorical Exclusion with the National Environmental Policy Act (NEPA). Environmental compliance will not occur until a complete Environmental Study Request (ESR) with adequate mapping is submitted to Environmental Management and appropriate environmental studies are completed. A minimum 18 to 24 month lead time for environmental studies is anticipated prior to Project Approval and Environmental Document (PA&ED). This assumes there are no sensitive resources within the project limits and the overall workload allows meeting the 18 to 24 months to obtain environmental compliance.

There are potential significant environmental issues for this project. Bat surveys are required. Avoidance, minimization and mitigation measures may be required to reduce impacts to bats. Permits will be required if work is conducted within the ordinary high water mark of Dog Creek. Mitigation may be required if riparian and wetland areas are impacted. Mitigation may be required if cultural resources are impacted. Permits



such as 401, 404 and 1602 will be required if work is conducted within the ordinary high water mark of Dog Creek.

Traffic: All seismic retrofit work is to be performed under live traffic loads. Bicycles are allowed at this project location although few bicyclists are expected due to the undeveloped setting. Bicycle travel shall be allowed through the work zone in accordance with Traffic Operations Policy Directive 11-01. Portable Changeable Message Signs are recommended for Std Plan T-10 lane closures on I-5 due to the high approach speeds.

Right of Way: Right of Way Lead Time will require a minimum of 12 months after Right of Way (R/W) receives project first appraisal maps, utility conflict maps, and the necessary environmental clearance and freeway agreements have been approved and obtained. Additionally a minimum of 9 months will be required after receiving the last appraisal map to Right of Way for certification. Shorter lead times will require either more right of way resources or an increased number of condemnation suits to be filed. Either of these actions may reflect adversely on the District's other programs or our public image generally.

Caltrans R/W is within the Shasta-Trinity National Forest. A temporary Special Use permit will be needed. No utility conflicts are anticipated.

A temporary construction easement (TCE) for 0.68 acres is needed for staging and storage purposes.

Initial Site Assessment: This route should not have aerial deposited lead (ADL) concentrations in excess of the allowable threshold. This project may have asbestos containing material (ACM). The project contract should state contractor needs to address asbestos compliance plan for the project. Also the contractor should provide written documentation that recycling or disposal facilities acknowledge the potential for lead and asbestos on the material received. A task order will be required during design to survey for ACM and ADL concentration.

System Planning: The project is consistent with state and local transportation plans and programs. The 2004 Shasta County Regional Transportation Plan (RTP) addresses the need for seismic retrofit and/or replacement of the Dog Creek Bridge. The current facility for the Dog Creek Bridge structure is a 4-lane freeway with 12-foot lanes, 10-foot outside shoulders, and 5-foot inside shoulders. The June 2008 I-5 Transportation Concept Report (TCR) concludes that the 20-year concept is a 4-lane freeway with 12-foot lanes, 10-foot (outside) shoulders and 5-foot (inside) shoulders. The post-twenty year facility concept is a 4-lane freeway with 12-foot lanes, 10-foot (outside) shoulders and 5-foot (inside) shoulders. This project maintains this concept.



## 8. PROJECT PERSONNEL:

Project Engineer:	Oscar Cervantes	(530) 225-3236
Project Manager:	Tim Huckabay	(530) 225-3466
Program Manager:	Ed Lamkin	(530) 225-3345
Bridge Engineer:	Joey Aquino	(916) 227-8098
Bridge Liaison Engineer:	Moe Amini	(916) 227-8797
Traffic Management:	Clint Burkenpas	(530) 225-3245
R/W Agent:	Lisa Harvey	(530) 225-3201
Environmental:	Tom Balkow	(530) 225-3405
R/W Railroad Coordinator	Michael Guzman	(530) 225-3584

## 10. PROJECT REVIEWS:

FHWA Coordination: This project was discussed with Cesar E. Perez our FHWA reviewer on August 08, 2011 and concurred there is no FHWA involvement with this project. This project is eligible for federal aid-aid funding.

## 11. LIST OF ATTACHMENTS:

- A. Preliminary PSSR Cost Estimate (Sidehill Viaduct and Dog Creek estimates)
- B. Preliminary Environmental Assessment Report (PEAR)
- C. Right of Way Data Sheet (Sidehill Viaduct and Dog Creek bridge)
- D. Traffic Management Plan Data Sheet (TMP)
- E. Structures APS ( Revised Sidehill Viaduct Bridge replacement and Dog Creek seismic retrofit)
- F. Project Threat and Opportunity Listing ( for Sidehill Viaduct and Dog Creek Bridge)
- G. Bridge Inspection Records Information System document for Dog Creek Bridge
- H. Vicinity Map





**PRELIMINARY  
PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0042L  
PM: 29.5-30.0  
EA: 02-0E090K

Type of Estimate: PSSR

Program Code: HA-21

Project Description: In Shasta County near Shasta Lake

Proposed Improvement: Construct New Parallel Structure, Sidehill Viaduct (Alternative 4)

This Six-Page Estimate sub-divided, 'Color-Coded', and Linked to the PSSR Estimate Sheet

ROADWAY ITEMS: (2011 \$) \$2,940,000

STRUCTURE ITEMS: (2011 \$) \$15,620,000

SUBTOTAL CONSTRUCTION:	\$18,560,000
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RIGHT-OF-WAY: \$42,750

<b>ALTERNATIVE 4 TOTAL PROJECT COST:</b>	<b>\$18,600,000</b>
--	---------------------

(Capital only, does not include CT Support costs)

Approved by Project Manager  
Phone No.(530) 225-2154

Tim Huckabay, PE

Date

Estimate prepared by  
Phone No. (530)-225-3236

*Oscar Cervantes*  
Oscar Cervantes, PE

*8-30-11*  
Date

**ATTACHMENT A**

Alternative 4: Page - 1





**PRELIMINARY  
PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0042L  
PM: 29.5-30.0  
EA: 02-0E090K

**I ROADWAY ITEMS**  
**Section 1: Earthwork**

	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	
Progress Schedule	1	LS	\$15,000	\$15,000	"B" Pavement \$762,331
Remove Pavement	6,700	Ft <sup>2</sup>	\$0.93	\$6,231	"G" Landscape \$12,000
Roadway/Structure Excavation	3,593	Yd <sup>3</sup>	\$22	\$77,900	"I" Roadside Mgt \$600
Remove Trees	30	EA	\$400	\$12,000	"Nb" Environmental \$21,000
Clearing & Grubbing	1	LS	\$25,000	\$25,000	"L" Haz Materials \$12,000
Hwy Planting, Irrigation, and/or Mitigation	1	LS	\$12,000	\$12,000	
Minor Concrete (Weed Barrier) MBGR	100	Ft <sup>2</sup>	\$5.58	\$600	
Develop Water Supply	1	LS	\$10,000	\$10,000	
Prepare Water Pollution Control Program	1	LS	\$5,000	\$5,000	"M" Stormwater \$268,362
Construction BMPs	1	LS	\$263,362	\$263,362	

Total Earthwork (Section 1):	\$427,093
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**Section 2: Structural Section**

	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	
Asphalt Concrete (TYPE A)	3,522	TON	\$100	\$352,200	
Cold Plane AC Pavement	46,526	Ft <sup>2</sup>	\$1.27	\$59,100	
Aggregate Base	2,634	Yd <sup>3</sup>	\$60	\$158,100	"C" Approach Slab \$69,200
Approach Slab	96	Yd <sup>3</sup>	\$724	\$69,200	
Shoulder Rumble Strip	35	STA	\$169	\$6,000	(In Structure portion)
Imported Material (Shoulder Backing)	278	TON	\$60	\$16,700	
Place Shoulder Backing	35	STA	\$259	\$9,100	

Total Structural Section (Section 2):	\$670,400
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**Section 3: Drainage**

<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>
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Total Drainage (Section 3):	\$0
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**PRELIMINARY  
PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0042L  
PM: 29.5-30.0  
EA: 02-0E090K

**Section 4: Specialty Items**

	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>
RE Office	1	LS	\$15,000	\$15,000
Hazardous Material Survey	1	LS	\$12,000	\$12,000
Migratory Bird / Mammal Mitigation	1	LS	\$10,000	\$10,000
CEQA Document Filing Fee	1	LS	\$1,000	\$1,000
Historical/Archaeological	1	LS	\$10,000	\$10,000

Total Specialty Items (Section 4):	\$48,000
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**Section 5: Traffic Items:**

	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>"A" TC Elements</u>
Traffic Control System	60	Day	\$2,100	\$126,000	\$655,400
Maintain Traffic Control	35	Day	\$700	\$24,500	
COZEEP	1	LS	\$10,000	\$10,000	
Remove Traffic Stripe	3,000	Ft	\$1.00	\$3,000	
Striping/Pavement Markers & Markings	7,488	Ft	\$0.4	\$2,900	
Construction Area Signs	1	LS	\$10,000	\$10,000	
Temp. Barrier Rail (Type K)	4,000	Ft	\$35	\$140,000	
Temp. Striping	1	LS	\$1,500	\$1,500	
Transition Railing (Type WB)	2	EA	\$3,500	\$7,000	
Remove MBGR	514	Ft	\$9.50	\$4,900	
MBGR	500	Ft	\$50	\$25,000	
Temporary Crash Cushions	1	LS	\$4,000	\$4,000	"D" Approach Guardrail
Terminal System (Type SRT)	1	EA	\$2,500	\$2,500	\$39,400
Signs & Object Markers	1	LS	\$3,500	\$3,500	
Radar CMS	1	LS	\$200,000	\$200,000	
CCTV	1	LS	\$130,000	\$130,000	
Portable Changeable Message Signs	1	LS	\$5,000	\$5,000	
Project Specific Media Releases	1	LS	\$2,500	\$2,500	
Caltrans Worker Safety Media Fund	1	LS	\$2,500	\$2,500	

Total Traffic Items (Section 5) :	\$704,800
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<b>SUBTOTAL (Sections 1-5) :</b>	<b>\$1,850,293</b>
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**ATTACHMENT A**

Alternative 4: Page - 3





# **PRELIMINARY PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0042L  
PM: 29.5-30.0  
EA: 02-0E090K

**Section 6: Minor Items:**

Subtotal of sections 1-5=      \$1,850,293      5%      \$93,000  
(0%-10%)

Total Minor Items (Section 6):	\$93,000
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☒ **Section 7: Time Related Overhead / Partnering:**

Subtotal of sections 1-5=      \$1,850,293      7%      \$130,000  
(2%-10%)

Total Time Related Overhead (Section 7):	\$130,000
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**Section 8: Roadway Mobilization:**

Subtotal of sections 1-5=      \$1,850,293  
Minor Items=      \$93,000  
Sum=      \$1,943,293      5%      \$97,000  
(0%-10%)

Total Roadway Mobilization (Section 8):	\$97,000
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**Section 9: Roadway Supplemental:**

Subtotal of sections 1-5=      \$1,850,293  
Minor Items=      \$93,000  
Sum=      \$1,943,293      10%      \$2,000  
(0%-10%)

Total Roadway Supplemental (Section 9):	\$194,000
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**Section 10: Roadway Contingencies:**

Subtotal of sections 1-5=      \$1,850,293  
Subtotal of section 6-9=      \$514,000  
Sum=      \$2,364,293      25%      \$6,000  
(10%-25%)

Total Roadway Contingencies (Section 10):	\$591,000
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1/5/2011 15:29	<b>TOTAL ROADWAY ITEMS (Total of Sections 1-10):</b>	<b>\$2,955,000</b>
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## ATTACHMENT A

Alternative 4: Page - 4





**PRELIMINARY  
PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0042L  
PM: 29.5-30.0  
EA: 02-0E090K

**III STRUCTURES ITEMS**

	<b>STRUCTURES</b>		
	<u>No. 1</u>	<u>No. 2</u>	<u>No. 3</u>
Bridge Name	SIDEHILL VIADUCT		
Structure Type	-		
Width (new or width addition)	41.83		
Span Lengths	900.00		
Total Area	37,649.97		
Footing Type (Pile/Spread)	-		
Cost per square foot	\$ 263		

	<u>APS DATA</u>	<u>ADDITIONS</u>	<u>PSSR DATA</u>
(A) or (B): Total Cost for Structure	\$ 9,911,332		\$9,911,332
(E) MSE Wall Included in APS	\$ -		
Additional MSE Wall		\$0	\$0
(G) Bridge Removal	\$ 500,000		\$500,000
(D) Temporary Supports		\$0	\$0
(F) Tubular Bicycle Railing		\$0	\$0
SUB	\$ 10,411,332		\$10,411,332
Mobilization (10%)	\$ 1,041,133		\$1,041,133
Time Related Overhead (10%)	\$ 1,041,133		\$1,041,133
Contingencies (25%)	\$ 3,123,400		\$3,123,400
<b>Subtotal Structure Items in APS:</b>	<b>\$ 15,616,998</b>		

<b>Total PSSR Structure Items:</b>	<b>\$</b>	<b>15,616,998</b>
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Railroad Related Costs (See "H" in District Work)	\$0
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**ATTACHMENT A**





**PRELIMINARY  
PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0042L  
PM: 29.5-30.0  
EA: 02-0E090K

**IV RIGHT-OF-WAY**

	<u>Current Values</u> (Future Values)	<u>Escalation Rates</u>	<u>Escalated Values</u>
Acquisition, including excess lands and damages to remainder(s)	\$18,750	2.0 %	\$0
Mitigation acquisition & credits	\$15,000	0.0 %	\$0
Project development permit fees	\$9,000	0.0 %	\$0
Utility Relocation (State share)	\$0	5.0 %	\$0
Clearance /Demolition	\$0	0.0 %	\$0
Relocation Assistance (RAP)	\$0	0.0 %	\$0
Title and Escrow fees	\$0	N/A	\$0
Construction Contract work	\$0	0.0 %	\$0

<b>Total right of Way (Current Cost)=</b>	<b>\$42,750</b>
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<b>Total right of Way (Escalated Cost)=</b>	<b>\$0</b>
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**PRELIMINARY  
PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0027  
PM: 45.5  
EA: 02-0E090K

Type of Estimate: PSSR

Program Code: HA-21

Project Description: In Shasta County near Shasta Lake

Proposed Improvement: Seismic Retrofit, **DOG CREEK**

**This Six-Page Estimate sub-divided, 'Color-Coded', and Linked to the PSSR Estimate Sheet**

ROADWAY ITEMS: (2011 \$) \$840,000

STRUCTURE ITEMS: (2011 \$) \$4,270,000

SUBTOTAL CONSTRUCTION:	\$5,110,000
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RIGHT-OF-WAY: (2011 \$) \$32,750

<b>DOG CREEK TOTAL PROJECT COST:</b>	<b>\$5,200,000</b>
--------------------------------------	--------------------

(Capital only, does not include CT Support costs)

Reviewed by Program Manager \_\_\_\_\_  
Phone No. (530)-225-3545 Ed Lamkin, PE Date

Approved by Project Manager \_\_\_\_\_  
Phone No. (530) 225-2154 Tim Huckabay, PE Date

Estimate prepared by \_\_\_\_\_  
Phone No. (530)-225-3236 Oscar Cervantes P.E. Date

**ATTACHMENT A**





**PRELIMINARY  
PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0027  
PM: 45.5  
EA: 02-0E090K

Type of Estimate: PSSR

Program Code: HIA-21

Project Description: In Shasta County near Shasta Lake

Proposed Improvement: Seismic Retrofit, DOG CREEK

This Six-Page Estimate sub-divided, 'Color-Coded', and Linked to the PSSR Estimate Sheet

ROADWAY ITEMS: (2011 \$) \$870,000

STRUCTURE ITEMS: (2011 \$) \$4,270,000

SUBTOTAL CONSTRUCTION:	\$5,140,000
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RIGHT-OF-WAY: (2011 \$) \$32,750

<b>DOG CREEK TOTAL PROJECT COST:</b>	<b>\$5,200,000</b>
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(Capital only, does not include C/T Support costs)

Estimate prepared by \_\_\_\_\_  
Phone No. (530)-225-3236

Oscar Cervantes P.E.

\_\_\_\_\_  
Date

**ATTACHMENT A**



**PRELIMINARY  
PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0027  
PM: 45.5  
EA: 02-0E090K

**I ROADWAY ITEMS**  
**Section 1: Earthwork**

	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	
Progress Schedule	1	LS	\$15,000	\$15,000	<u>"B" Pavement</u> \$538,000
Lead Compliance Plan	1	LS	\$2,000	\$2,000	<u>"K" Landscape</u> \$20,000
Remove Trees	0	EA	\$400	\$0	<u>"J" Environmental</u> \$40,000
Clearing & Grubbing	1	LS	\$25,000	\$25,000	<u>"L" Haz Materials</u> \$13,000
Tack Coat	0	TON	\$280	\$0	
Data Cores	0	LS	\$700	\$0	
Hwy Planting,Irrigation,and/or Mitigation	1	LS	\$20,000	\$20,000	
Develop Water Supply	1	LS	\$10,000	\$10,000	
Construction BMP's	1	LS	\$51,600	\$51,600	<u>"M" Stormwater</u> \$56,600
Prepare Water Pollution Control Program	1	LS	\$5,000	\$5,000	

Total Earthwork (Section 1):	\$128,600
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**Section 2: Structural Section**

<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	
				<u>"C" Approach Slab</u> \$0 (In Structure portion)

Total Structural Section (Section 2):	\$0
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**Section 3: Drainage**

<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>
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Total Drainage (Section 3):	\$0
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**ATTACHMENT A**





**PRELIMINARY  
PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0027  
PM: 45.5  
EA: 02-0E090K

**Section 4: Specialty Items**

	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>
RE Office	1	LS	\$4,000	\$4,000
Hazardous Material Survey	1	LS	\$13,000	\$13,000
Migratory Bird / Mammal Mitigation	1	LS	\$10,000	\$10,000
DFG 1602 Permit	1	LS	\$4,000	\$4,000
CVRWQCB 401 Permit	1	LS	\$3,000	\$3,000
Section 404 NW Permit	1	LS	\$2,000	\$2,000
CEQA Doc Filing Fee	1	LS	\$1,000	\$1,000
Riparian /Wetland	1	LS	\$20,000	\$20,000

Total Specialty Items (Section 4):	\$57,000
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**Section 5: Traffic Items:**

	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>"A" TC Elements</u>
Traffic Control System	180	Day	\$1,800	\$324,000	\$519,500
Maintain Traffic Control	180	Day	\$900	\$162,000	
COZEEP	1	LS	\$25,000	\$25,000	
Portable Changeable Message Signs	1	LS	\$5,000	\$5,000	
TMP Public Information	1	LS	\$2,500	\$2,500	
Caltrans Worker Safety Media Fund	1	LS	\$1,000	\$1,000	

Total Traffic Items (Section 5) :	\$519,500
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<b>SUBTOTAL (Sections 1-5) :</b>	<b>\$652,100</b>
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**PRELIMINARY  
PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0027  
PM: 45.5  
EA: 02-0E090K

**Section 6: Minor Items:**

Subtotal of sections 1-5=      \$652,100      5%      \$33,000  
(0%-10%)

Total Minor Items (Section 6):	\$33,000
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**Section 7: Time Related Overhead / Partnering:**

Subtotal of sections 1-5=      \$652,100      7%      \$46,000  
(2%-10%)

Total Time Related Overhead (Section 7):	\$46,000
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**Section 8: Roadway Mobilization:**

Subtotal of sections 1-5=      \$652,100  
Minor Items=      \$33,000  
Sum=      \$685,100      5%      \$34,000  
(0%-10%)

Total Roadway Mobilization (Section 8):	\$34,000
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**Section 9: Roadway Supplemental:**

Subtotal of sections 1-5=      \$652,100  
Minor Items=      \$33,000  
Sum=      \$685,100      10%      \$1,000  
(0%-10%)

Total Roadway Supplemental (Section 9):	\$69,000
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**Section 10: Roadway Contingencies:**

Subtotal of sections 1-9=      \$766,100  
Sum=      \$766,100      25%      \$2,000  
(10%-25%)

Total Roadway Contingencies (Section 10):	\$2,000
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12/17/2010 13:00 

<b>TOTAL ROADWAY ITEMS (Total of Sections 1-10):</b>	<b>\$836,000</b>
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**PRELIMINARY  
PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0027  
PM: 45.5  
EA: 02-0E090K

**III STRUCTURES ITEMS**

	<b>STRUCTURES</b>		
	<u>No. 1</u>	<u>No. 2</u>	<u>No. 3</u>
Bridge Name	DOG CREEK		
Structure Type	-		
Width (new or width addition)	-		
Span Lengths	-		
Total Area	-		
Footing Type (Pile/Spread)	-		
Cost per square foot	\$ -		
	<u>APS DATA</u>	<u>ADDITIONS</u>	<u>PSSR DATA</u>
(A) or (B): Total Cost for Structure	\$ 2,841,333		\$2,841,333
(E) MSE Wall Included in APS	\$ -		
Additional MSE Wall		\$0	\$0
(G) Bridge Removal	\$ -		\$0
(D) Temporary Supports		\$0	\$0
(F) Tubular Bicycle Railing		\$0	\$0
SUB	\$ 2,841,333		\$2,841,333
Mobilization (10%)	\$ 284,133		\$284,133
TRO (10%)	\$ 284,133		\$284,133
Contingencies (25%)	\$ 852,400		\$852,400
Subtotal Structure Items in APS:	\$ 4,262,000		\$852,400
<b>Total PSSR Structure Items: \$ 4,262,000</b>			

**ATTACHMENT A**

Alternative 1: Page - 5





**PRELIMINARY  
PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0027  
PM: 45.5  
EA: 02-0E090K

**IV RIGHT-OF-WAY**

	<u>Current Values</u> (Future Values)	<u>Escalation Rates</u>	<u>Escalated Values</u>
Acquisition, including excess lands and damages to remainder(s)	\$8,750	2.0 %	\$0
Mitigation acquisition & credits	\$15,000	0.0 %	\$0
Project development permit fees	\$9,000	0.0 %	\$0
Utility Relocation (State share)	\$0	5.0 %	\$0
Clearance /Demolition	\$0	0.0 %	\$0
Relocation Assistance (RAP)	\$0	0.0 %	\$0
Title and Escrow fees	\$0	N/A	\$0
Construction Contract work	\$0	0.0 %	\$0

Railroad Related Costs  
(See "O(f)" in District Work)

\$ -

**Total right of Way (Current Cost)= \$32,750**

**Total right of Way (Escalated Cost)= \$0**



# PRELIMINARY PROJECT COST ESTIMATE SUMMARY

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0042L  
PM: 29.5-30.0  
EA: 02-0E090K

Type of Estimate: PSSR

Program Code: HA-21

Project Description: In Shasta County near Shasta Lake  
Checked John's est & revised structure cost, constr BMP cost, deleted railroad related costs, all other costs agreed to John's Estimate

Proposed Improvement: Seismic Retrofit, ALTERNATIVE 1 (John's alt 2)

This Six-Page Estimate sub-divided, 'Color-Coded', and Linked to the PSSR Estimate Sheet

ROADWAY ITEMS: (2011 \$) \$1,040,000

STRUCTURE ITEMS: (2011 \$) \$3,870,000

SUBTOTAL CONSTRUCTION: \$4,910,000

RIGHT-OF-WAY: \$148,500

**ALTERNATIVE 1 TOTAL PROJECT COST: \$5,100,000**

(Capital only, does not include CT Support costs)

Estimate prepared by \_\_\_\_\_ 15 July, 2009 Date  
Phone No. (530)-225-3041 John H. Biendara  
Estimate revised by Oscar Cervantes Sept 02, 2011 Date  
version 2011-SEP-02 Oscar Cervantes, PE

ATTACHMENT A

**PRELIMINARY  
PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005

BRIDGE No. 06-0042L

PM: 29.5-30.0

EA: 02-0E090K

**I ROADWAY ITEMS**

**Section 1: Earthwork**

	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	
Progress Schedule	1	LS	\$15,000	\$15,000	
Remove Pavement	649	Ft <sup>2</sup>	\$0.93	\$604	"B" Pavement
Roadway/Structure Excavation	0	Yd <sup>3</sup>	\$68	\$0	\$140,204
X Lead Compliance Plan	1	LS	\$2,000	\$2,000	
Imported Borrow	0	Yd <sup>3</sup>	\$21	\$0	
Structure Backfill	0	Yd <sup>3</sup>	\$120	\$0	
Remove Trees	0	EA	\$400	\$0	"G" Landscape
Clearing & Grubbing	1	LS	\$25,000	\$25,000	\$114,000
X Tack Coat	0	TON	\$280	\$900	
X Data Cores	1	LS	\$700	\$700	
Erosion Control	1	LS	\$16,000	\$16,000	"I" Roadside Mat
Slope Protection	1	LS	\$32,000	\$32,000	\$600
Revegetation	1	LS	\$48,000	\$48,000	"Nb" Environmental
Minor Concrete (Weed Barrier) MBGR	100	Ft <sup>2</sup>	\$5.58	\$600	\$124,500
Aesthetic Treatments	1	LS	\$18,000	\$18,000	"L" Haz Materials
Develop Water Supply	1	LS	\$10,000	\$10,000	\$15,000
X Construction BMP's	1	LS	\$86,300	\$86,300	"M" Stormwater
X Prepare Water Pollution Control Program	1	LS	\$5,000	\$5,000	\$91,300

<b>Total Earthwork (Section 1):</b>	<b>\$260,104</b>
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**Section 2: Structural Section**

	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	
X Hot Mix Asphalt	649	TON	\$110	\$71,500	
Cold Plane AC Pavement	8,200	Ft <sup>2</sup>	\$1.27	\$10,500	
X Aggregate Base	0	Yd <sup>3</sup>	\$55	\$0	"C" Approach Slab
Approach Slab	0	Yd <sup>3</sup>	\$724	\$0	\$0
Shoulder Rumble Strip	0	STA	\$169	\$0	(In Structure portion)
Imported Material (Shoulder Backing)	0	TON	\$60	\$0	
Place Shoulder Backing	0	STA	\$110	\$0	

<b>Total Structural Section (Section 2):</b>	<b>\$82,000</b>
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**Section 3: Drainage**

ATTACHMENT A



Total Drainage (Section 3):	\$0
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## PRELIMINARY PROJECT COST ESTIMATE SUMMARY

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0042L  
PM: 29.5-30.0  
EA: 02-0E090K

### Section 4: Specialty Items

	Quantity	Unit	Unit Price	Item Cost	
Place AC Dike (Type F)	0	Ft	\$6.25	\$0	
RE Office	1	LS	\$4,000	\$4,000	
MBGR Retaining Wall w/ Asphaltics	0	Ft	\$0	\$0	(In Structure portion)
Tubular Bicycle Railing	0	Ft	\$63	\$0	
Closed Circuit Television	0	LS	\$130,000	\$0	
Hazardous Material Survey	1	LS	\$15,000	\$15,000	
Migratory Bird / Mammal Mitigation	1	LS	\$20,000	\$20,000	
Wetlands	1	LS	\$50,000	\$50,000	
DFG 1602 Permit	1	LS	\$4,000	\$4,000	
CVRWQCB 401 Permit	1	LS	\$500	\$500	
Riparian & Upland Vegetation	1	LS	\$50,000	\$50,000	

Total Specialty Items (Section 4):	\$143,500
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### Section 5: Traffic Items:

	Quantity	Unit	Unit Price	Item Cost	"A" TC Elements
X Traffic Control System	60	Day	\$1,800	\$108,000	\$320,300
X Maintain Traffic Control	60	Day	\$900	\$54,000	
COZEER	1	LS	\$60,000	\$60,000	
Remove Traffic Stripe	2,000	Ft	\$1.00	\$2,000	
Striping/Pavement Markers & Markings	3,300	Ft	\$0.4	\$1,300	
Construction Area Signs	1	LS	\$10,000	\$10,000	
Temp. Barrier Rail (Type K)	2,000	Ft	\$35	\$70,000	
Temp. Striping	1	LS	\$1,500	\$1,500	
Transition Railing (Type WB)	0	EA	\$3,500	\$0	
Remove MBGR	0	Ft	\$9.50	\$0	
MBGR	50	Ft	\$50	\$2,500	
Temporary Crash Cushions	0	LS	\$4,000	\$0	"D" Approach Guardrail
Terminal System (Type SRT)	1	EA	\$2,500	\$2,500	\$5,000
Signs & Object Markers	1	LS	\$3,500	\$3,500	
Icy Curve Warning Sensors	0	LS	\$254,497	\$0	
Temporary Signal System	0	LS	\$250,000	\$0	
Portable Changeable Message Signs	1	LS	\$5,000	\$5,000	
Project Specific Media Releases	1	LS	\$2,500	\$2,500	
Caltrans Worker Safety Media Fund	1	LS	\$2,500	\$2,500	

Total Traffic Items (Section 5):	\$325,300
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SUBTOTAL (Sections 1-5):	\$671,404
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# **PRELIMINARY PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0042L  
PM: 29.5-30.0  
EA: 02-0E090K

**Section 6: Minor Items:**

Subtotal of sections 1-5=	\$671,404	5	\$33,570
		(0%-10%)	

Total Minor Items(Section 6):	\$33,570
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☒ **Section 7: Time Related Overhead / Partnering:**

Subtotal of sections 1-5=	\$671,404	7.38	\$49,550
		(7%-10%)	

Total Time Related Overhead(Section 7):	\$49,550
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**Section 7: Roadway Mobilization:**

Subtotal of sections 1-5=	\$671,404		
Minor Items=	\$33,570		
Sum=	\$704,974	5	\$35,250
		(0%-10%)	

Total Roadway Mobilization(Section 7):	\$35,250
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**Section 8: Roadway Additions:**

**Supplemental**

Subtotal of sections 1-5=	\$671,404		
Minor Items=	\$33,570		
Sum=	\$704,974	10	\$70,000
		(0%-10%)	

**Contingencies**

Subtotal of sections 1-5=	\$671,404		
Minor Items=	\$33,570		
Sum=	\$704,974	25	\$176,000
		(10%-25%)	

Total Roadway Additions(Section 8):	\$246,000
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9/7/2011 12:19	<b>TOTAL ROADWAY ITEMS (Total of Sections 1-8):</b>	<b>\$1,036,000</b>
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# **PRELIMINARY PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0042L  
PM: 29.5-30.0  
EA: 02-0E090K

## **III STRUCTURES ITEMS**

### **STRUCTURES**

	<u>No. 1</u>	<u>No. 2</u>	<u>No. 3</u>
Bridge Name	SIDEHILL VIADUCT		
Structure Type	-		
Width (new or width addition)	42.00		
Span Lengths	-		
Total Area	-		
Footing Type (Pile/Spread)	-		
Cost per square foot			

	<u>APS DATA</u>	<u>ADDITIONS</u>	<u>PSSR DATA</u>
(A) or (B): Total Cost for Structure	\$ 2,866,658		\$2,866,658
(E) MSE Wall Included in APS	\$ -		
Additional MSE Wall		\$0	\$0
(G) Bridge Removal	\$ -		\$0
(D) Temporary Supports		\$0	\$0
(F) Tubular Bicycle Railing			\$0
SUB	\$ 2,866,658		\$2,866,658
Mobilization (10%)	\$ 286,666		\$286,666
Contingencies (25%)	\$ 716,665		\$716,665
Subtotal Structure Items in APS:	\$ 3,869,989	**	

\*\* Revised est based on structure cost index and May 28, 2008 APS

<b>Total PSSR Structure Items:</b>	<b>\$ 3,869,989</b>
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ATTACHMENT A

# **PRELIMINARY PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0042L  
PM: 29.5-30.0  
EA: 02-0E090K

## **IV RIGHT-OF-WAY**

	<u>Current Values</u> (Future Values)	<u>Escalation Rates</u>	<u>Escalated Values</u>
Acquisition, including excess lands and damages to remainder(s)	\$0	2.0 %	\$0
Mitigation acquisition & credits	\$124,500	0.0 %	\$0
Project development permit fees	\$24,000	0.0 %	\$0
Utility Relocation(State share)	\$0	5.0 %	\$0
Clearance /Demolition	\$0	0.0 %	\$0
Relocation Assistance (RAP)	\$0	0.0 %	\$0
Title and Escrow fees	\$0	N/A	\$0
Construction Contract work	\$0	0.0 %	\$0
Railroad Related Costs	\$ -		
<b>Total right of Way (Current Cost)=</b>			<b>\$148,500</b>
<b>Total right of Way (Escalated Cost)=</b>			<b>\$0</b>

ATTACHMENT A

# PRELIMINARY PROJECT COST ESTIMATE SUMMARY

DIST-CO-RTE: 02-SHA-005

BRIDGE No. 06-0042L

PM: 29.5-30.0

EA: 02-0E090K

Type of Estimate: PSSR

Program Code: HA-21

Project Description: In Shasta County near Shasta Lake

Proposed Improvement: Seismic retrofit plus additional safety and design improvements

**ALTERNATIVE 2 (John's Alt 3)**

This Six-Page Estimate sub-divided, 'Color-Coded', and Linked to the PSSR Estimate Sheet

ROADWAY ITEMS: (2011 \$) \$1,760,000

STRUCTURE ITEMS: (2011 \$) \$3,870,000

**SUBTOTAL CONSTRUCTION: \$5,630,000**

RIGHT-OF-WAY: \$148,500

**ALTERNATIVE 2 TOTAL PROJECT COST: \$5,800,000**

(Capital only, does not include CT Support costs)

Estimate prepared by  
Phone No. (530)-225-3041 John H. Biendara

7/15/2009

Date

Estimate revised by  
Oscar Cervantes PE

9/2/2011

Date

version 2011-SEP-02

ATTACHMENT A

# **PRELIMINARY PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0042L  
PM: 29.5-30.0  
EA: 02-0E090K

## **I ROADWAY ITEMS Section 1: Earthwork**

	Quantity	Unit	Unit Price	Item Cost	
Progress Schedule	1	LS	\$15,000	\$15,000	
Remove Pavement	649	Ft <sup>2</sup>	\$0.93	\$604	"B" Pavement
Roadway/Structure Excavation	0	Yd <sup>3</sup>	\$68	\$0	\$115,204
X Lead Compliance Plan	1	LS	\$2,000	\$2,000	
Imported Borrow	0	Yd <sup>3</sup>	\$21	\$0	
Structure Backfill	0	Yd <sup>3</sup>	\$120	\$0	
Remove Trees	0	EA	\$400	\$0	"G" Landscape
Clearing & Grubbing	0	LS	\$25,000	\$0	\$17,600
X Tack Coat	0	TON	\$280	\$900	
X Data Cores	1	LS	\$700	\$700	
Erosion Control	1	LS	\$16,000	\$16,000	"I" Roadside Mgt
Slope Protection	1	LS	\$32,000	\$32,000	\$600
Revegetation	1	LS	\$48,000	\$48,000	"Nb" Environmental
Minor Concrete (Weed Barrier) MBGR	100	Ft <sup>2</sup>	\$5.58	\$600	\$124,500
Aesthetic Treatments	1	LS	\$18,000	\$18,000	"L" Haz Materials
Develop Water Supply	1	LS	\$10,000	\$10,000	\$15,000
X Construction BMP's	1	LS	\$86,300	\$86,300	"M" Stormwater
X Prepare Water Pollution Control Program	1	LS	\$5,000	\$5,000	\$91,300
X 0	1	0	\$0	\$0	
X 0	1	0	\$0	\$0	
X 0	1	0	\$0	\$0	
X 0	4	0	\$0	\$0	
X 0	0	Ft <sup>2</sup>	\$0	\$0	
X 0	1	0	\$0	\$0	
X 0	0	0	\$0	\$0	
X 0	1,000	0	\$0	\$0	
X 0	200	0	\$0	\$0	
X 0	1,000	Ft <sup>2</sup>	\$0	\$0	
X 0	1,000	Ft <sup>2</sup>	\$0	\$0	
X 0	1	0	\$0	\$0	
X 0	500	0	\$0	\$0	
X 0	50	0	\$0	\$0	
X 0	1	0	\$0	\$0	

Total Earthwork (Section 1): \$235,104

## **Section 2: Structural Section**

	Quantity	Unit	Unit Price	Item Cost	
X Hot Mix Asphalt	649	TON	\$110	\$71,500	
Cold Plane AC Pavement	8,200	Ft <sup>2</sup>	\$1.27	\$10,500	
Aggregate Base	0	Yd <sup>3</sup>	\$55	\$0	"C" Approach Slab
Approach Slab	0	Yd <sup>3</sup>	\$724	\$0	\$0
Shoulder Rumble Strip	0	STA	\$169	\$0	(In Structure portion)
Imported Material (Shoulder Backing)	0	TON	\$60	\$0	
Place Shoulder Backing	0	STA	\$259	\$0	

Total Structural Section (Section 2): \$82,000

ATTACHMENT A



### Section 3: Drainage

	Quantity	Unit	Unit Price	Item Cost
Remove Drainage Inlet	0	EA	\$960	\$0
Underdrain Marker	0	EA	\$77	\$0
Marker (Culvert)	0	EA	\$71	\$0
200 mm Perforated pipe (Underdrain)	0	FT	\$66	\$0
Misc. Drainage (connect/abandon old UD)	0	LS	\$2,000	\$0
450 mm Corrugated Steel Pipe	0	FT	\$154	\$0
Type GO Drainage Inlet	0	EA	\$3,500	\$0

Total Drainage (Section 3): \$0

**PRELIMINARY  
PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0042L  
PM: 29.5-30.0  
EA: 02-0E090K

**Section 4: Specialty Items**

	Quantity	Unit	Unit Price	Item Cost	
Place AC Dike (Type F)	0	Ft	\$6.25	\$0	
RE Office	1	LS	\$4,000	\$4,000	
MSE Retaining Wall w/ Aesthetics	0	Ft	\$0	\$0	(In Structure portion)
Removal of Type 9 Bridge Rail	792	Ft	\$40	\$31,700	
Tubular Bicycle Railing	792	Ft	\$110	\$87,200	
Type 736 Br Rail	792	Ft	\$150	\$118,800	
Closed Circuit Television	0	LS	\$130,000	\$0	
Hazardous Material Survey	1	LS	\$15,000	\$15,000	
Migratory Bird / Mammal Mitigation	1	LS	\$20,000	\$20,000	
Wetlands	1	LS	\$50,000	\$50,000	
DFG 1602 Permit	1	LS	\$4,000	\$4,000	
CVRWQCB 401 Permit	1	LS	\$500	\$500	
Riparian & Upland Vegetation	1	LS	\$50,000	\$50,000	

**Total Specialty Items (Section 4): \$381,200**

**Section 5: Traffic Items:**

	Quantity	Unit	Unit Price	Item Cost	"A" TC Elements
X Traffic Control System	60	Day	\$1,800	\$108,000	\$574,800
X Maintain Traffic Control	60	Day	\$900	\$54,000	
COZEPP	1	LS	\$60,000	\$60,000	
Remove Traffic Stripe	2,000	Ft	\$1.00	\$2,000	
Striping/Pavement Markers & Markings	3,300	Ft	\$0.4	\$1,300	
Construction Area Signs	1	LS	\$10,000	\$10,000	
Temp. Barrier Rail (Type K)	2,000	Ft	\$35	\$70,000	
Temp. Striping	1	LS	\$1,500	\$1,500	
Transition Railing (Type WB)	0	EA	\$3,500	\$0	
Remove MBGR	0	Ft	\$9.50	\$0	
MBGR	50	Ft	\$50	\$2,500	
Temporary Crash Cushions	0	LS	\$4,000	\$0	"D" Approach Guardrail
Terminal System (Type SRT)	1	EA	\$2,500	\$2,500	\$5,000
Signs & Object Markers	1	LS	\$3,500	\$3,500	
Icy Curve Warning Sensors	1	LS	\$254,497	\$254,500	
Temporary Signal System	0	LS	\$250,000	\$0	
Portable Changeable Message Signs	1	LS	\$5,000	\$5,000	
Project Specific Media Releases	1	LS	\$2,500	\$2,500	
Caltrans Worker Safety Media Fund	1	LS	\$2,500	\$2,500	

**Total Traffic Items (Section 5): \$579,800**

**SUBTOTAL (Sections 1-5): \$1,138,604**

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Alternative 2: Page - 4

# PRELIMINARY PROJECT COST ESTIMATE SUMMARY

EST-CD-RTE-01-011-001  
R011001-01-00-0001  
FAC 2017-000  
CAR 02-000000

Section 1: Other Items

Subtotal of Section 1 -	\$1,100,000	0	\$0.00
Section 1: Other Items			\$0.00

Section 2: Other Items

Subtotal of Section 2 -	\$1,100,000	0	\$0.00
Section 2: Other Items			\$0.00

Section 3: Other Items

Subtotal of Section 3 -	\$1,100,000	0	\$0.00
Section 3: Other Items			\$0.00

Section 4: Other Items

Subtotal of Section 4 -	\$1,100,000	0	\$0.00
Section 4: Other Items			\$0.00

Section 5: Other Items

Subtotal of Section 5 -	\$1,100,000	0	\$0.00
Section 5: Other Items			\$0.00

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**PRELIMINARY  
PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0042L  
PM: 29.5-30.0  
EA: 02-0E090K

**Section 6: Minor Items:**

Subtotal of sections 1-5=      \$1,138,604      5      \$56,930  
(0%-10%)

Total Minor Items (Section 6):	\$56,930
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☒ **Section 7: Time Related Overhead / Partnering:**

Subtotal of sections 1-5=      \$1,138,604      7.38      \$84,030  
(2%-10%)

Total Time Related Overhead (Section 7):	\$84,030
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**Section 7: Roadway Mobilization:**

Subtotal of sections 1-5=      \$1,138,604  
Minor Items=      \$56,930  
Sum=      \$1,195,534      5      \$59,780  
(0%-10%)

Total Roadway Mobilization (Section 7):	\$59,780
---	----------

**Section 8: Roadway Additions:**

**Supplemental**

Subtotal of sections 1-5=      \$1,138,604  
Minor Items=      \$56,930  
Sum=      \$1,195,534      10      \$120,000  
(0%-10%)

**Contingencies**

Subtotal of sections 1-5=      \$1,138,604  
Minor Items=      \$56,930  
Sum=      \$1,195,534      25      \$299,000  
(10%-25%)

Total Roadway Additions (Section 8):	\$419,000
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9/7/2011 12:19	<b>TOTAL ROADWAY ITEMS (Total of Sections 1-8):</b>	<b>\$1,758,000</b>
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# PRELIMINARY PROJECT COST ESTIMATE SUMMARY

DIST-CO-RTE: 02-SHA-005

BRIDGE No. 06-0042L

PM: 29.5-30.0

EA: 02-0E090K

Type of Estimate: PSSR

Program Code: HA-21

Project Description: In Shasta County near Shasta Lake

Proposed Improvement: Construct New Structure, ALTERNATIVE 3 (same location- John's alt 4)

This Six-Page Estimate sub-divided, 'Color-Coded', and Linked to the PSSR Estimate Sheet

ROADWAY ITEMS: (2011 \$) \$1,870,000

STRUCTURE ITEMS: (2011 \$) \$11,260,000

SUBTOTAL CONSTRUCTION: \$13,130,000

RIGHT-OF-WAY: \$148,500

**ALTERNATIVE 3 TOTAL PROJECT COST: \$13,300,000**

(Capital only, does not include CT Support costs)

Estimate prepared by

Phone No. (530)-225-3041

Estimate revised by

John H. Biendara

Oscar Cervantes P.E.

7/15/2009

Date

9/2/2011

Date

ATTACHMENT A

Alternative 3: Page - 1

# **PRELIMINARY PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005

BRIDGE No. 06-0042L

PM: 29.5-30.0

EA: 02-0E090K

**I ROADWAY ITEMS****Section 1: Earthwork**

	Quantity	Unit	Unit Price	Item Cost	
Progress Schedule	1	LS	\$15,000	\$15,000	
Remove Pavement	649	Ft <sup>2</sup>	\$0.93	\$604	"B" Pavement
Roadway/Structure Excavation	0	Yd <sup>3</sup>	\$68	\$0	\$115,204
X Lead Compliance Plan	1	LS	\$2,000	\$2,000	
Imported Borrow	0	Yd <sup>3</sup>	\$21	\$0	
Structure Backfill	0	Yd <sup>3</sup>	\$120	\$0	
Remove Trees	0	EA	\$400	\$0	"G" Landscape
Clearing & Grubbing	0	LS	\$25,000	\$0	\$114,000
X Tack Coat	0	TON	\$280	\$900	
X Data Cores	1	LS	\$700	\$700	
Erosion Control	1	LS	\$16,000	\$16,000	"I" Roadside Mgt
Slope Protection	1	LS	\$32,000	\$32,000	\$600
Revegetation	1	LS	\$48,000	\$48,000	"Nb" Environmental
Minor Concrete (Weed Barrier) MBGR	100	Ft <sup>2</sup>	\$5.58	\$600	\$124,500
Aesthetic Treatments	1	LS	\$18,000	\$18,000	"L" Haz Materials
Develop Water Supply	1	LS	\$10,000	\$10,000	\$15,000
X Construction BMP's	1	LS	\$218,800	\$218,800	"M" Stormwater
X Prepare Water Pollution Control Program	1	LS	\$5,000	\$5,000	\$223,800
X 0	1	0	\$0	\$0	
X 0	1	0	\$0	\$0	
X 0	1	0	\$0	\$0	
X 0	2	0	\$0	\$0	
X 0	5,000	0	\$0	\$0	
X 0	2	0	\$0	\$0	
X 0	2	0	\$0	\$0	
X 0	1,000	0	\$0	\$0	
X 0	200	0	\$0	\$0	
X 0	10,000	0	\$0	\$0	
X 0	10,000	0	\$0	\$0	
X 0	6,00	0	\$0	\$0	
X 0	2,500	0	\$0	\$0	
X 0	250	0	\$0	\$0	
X 0	1	0	\$0	\$0	

Total Earthwork (Section 1):	\$367,604
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**Section 2: Structural Section**

	Quantity	Unit	Unit Price	Item Cost	
X Hot Mix Asphalt	649	TON	\$110	\$71,500	
Cold Plane AC Pavement	8,200	Ft <sup>2</sup>	\$1.27	\$10,500	
X Aggregate Base	0	Yd <sup>3</sup>	\$55	\$0	"C" Approach Slab
Approach Slab	0	Yd <sup>3</sup>	\$724	\$0	\$0
Shoulder Rumble Strip	0	STA	\$169	\$0	(In Structure portion)
Imported Material (Shoulder Backing)	0	TON	\$60	\$0	
Place Shoulder Backing	0	STA	\$259	\$0	

Total Structural Section (Section 2):	\$82,000
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**Section 3: Drainage**

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	Quantity	Unit	Unit Price	Item Cost	
Remove Drainage Inlet	0	EA	\$900	\$0	1" Drainage
Underdrain Marker	0	EA	\$7	\$0	\$0
Marker (Culvert)	0	EA	\$71	\$0	
200 mm Perforated pipe Underdrain	0	FT	\$66	\$0	
Misc. Drainage (correct/abandon old LID)	0	LS	\$2,000	\$0	
450 mm Corrugated Steel Pipe	0	FT	\$154	\$0	
Type GO Drainage Inlet	0	EA	\$3,500	\$0	

Total Drainage (Section 3): \$0

Section 3: Traffic Signs				
Item	Quantity	Unit Price	Total Price	Notes
1. 36" x 48" Sign	1	\$1,200.00	\$1,200.00	Standard rectangular sign
2. 30" x 42" Sign	1	\$1,000.00	\$1,000.00	Standard rectangular sign
3. 24" x 36" Sign	1	\$800.00	\$800.00	Standard rectangular sign
4. 18" x 24" Sign	1	\$400.00	\$400.00	Standard rectangular sign
5. 12" x 18" Sign	1	\$200.00	\$200.00	Standard rectangular sign
6. 8" x 12" Sign	1	\$100.00	\$100.00	Standard rectangular sign
7. 4" x 6" Sign	1	\$50.00	\$50.00	Standard rectangular sign
8. 2" x 3" Sign	1	\$25.00	\$25.00	Standard rectangular sign
9. 1" x 1.5" Sign	1	\$12.50	\$12.50	Standard rectangular sign
10. 0.5" x 0.75" Sign	1	\$6.25	\$6.25	Standard rectangular sign
11. 0.25" x 0.375" Sign	1	\$3.12	\$3.12	Standard rectangular sign
12. 0.125" x 0.1875" Sign	1	\$1.56	\$1.56	Standard rectangular sign
13. 0.0625" x 0.09375" Sign	1	\$0.78	\$0.78	Standard rectangular sign
14. 0.03125" x 0.046875" Sign	1	\$0.39	\$0.39	Standard rectangular sign
15. 0.015625" x 0.0234375" Sign	1	\$0.19	\$0.19	Standard rectangular sign
16. 0.0078125" x 0.01171875" Sign	1	\$0.09	\$0.09	Standard rectangular sign
17. 0.00390625" x 0.005859375" Sign	1	\$0.05	\$0.05	Standard rectangular sign
18. 0.001953125" x 0.0029296875" Sign	1	\$0.02	\$0.02	Standard rectangular sign
19. 0.0009765625" x 0.00146484375" Sign	1	\$0.01	\$0.01	Standard rectangular sign
20. 0.00048828125" x 0.000732421875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
21. 0.000244140625" x 0.0003662109375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
22. 0.0001220703125" x 0.00018310546875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
23. 0.00006103515625" x 0.000091552734375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
24. 0.000030517578125" x 0.0000457763671875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
25. 0.0000152587890625" x 0.00002288818359375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
26. 0.00000762939453125" x 0.000011444091796875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
27. 0.000003814697265625" x 0.0000057220458984375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
28. 0.0000019073486328125" x 0.00000286102294921875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
29. 0.00000095367431640625" x 0.000001430511474609375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
30. 0.000000476837158203125" x 0.0000007152557373046875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
31. 0.0000002384185791015625" x 0.00000035762786865234375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
32. 0.00000011920928955078125" x 0.000000178813934326171875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
33. 0.000000059604644775390625" x 0.0000000894069671630859375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
34. 0.0000000298023223876953125" x 0.00000004470348358154296875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
35. 0.00000001490116119384765625" x 0.000000022351741790771484375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
36. 0.000000007450580596923828125" x 0.0000000111758708953857421875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
37. 0.0000000037252902984619140625" x 0.00000000558793544769287109375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
38. 0.00000000186264514923095703125" x 0.000000002793967723846435546875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
39. 0.000000000931322574615478515625" x 0.0000000013969838619232177734375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
40. 0.0000000004656612873077392578125" x 0.00000000069849193096160888671875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
41. 0.00000000023283064365386962890625" x 0.000000000349245965480804443359375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
42. 0.000000000116415321826934814453125" x 0.0000000001746229827404022216796875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
43. 0.0000000000582076609134674072265625" x 0.00000000008731149137020111083984375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
44. 0.00000000002910383045673370361328125" x 0.000000000043655745685100555419921875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
45. 0.000000000014551915228366851806640625" x 0.0000000000218278728425502777099609375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
46. 0.0000000000072759576141834259033203125" x 0.00000000001091393642127513885498046875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
47. 0.00000000000363797880709171295166015625" x 0.000000000005456968210637569427490234375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
48. 0.000000000001818989403545856475830078125" x 0.0000000000027284841053187847137451171875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
49. 0.0000000000009094947017729282379150390625" x 0.00000000000136424205265939235687255859375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
50. 0.00000000000045474735088646111895751953125" x 0.0000000000006821210263296961784362779296875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
51. 0.000000000000227373675443230559478759765625" x 0.00000000000034106051316484808921813896484375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
52. 0.0000000000001136868377216152797393798828125" x 0.000000000000170530256582424044609069482421875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
53. 0.00000000000005684341886080763986968994140625" x 0.000000000000085265128291202022304534741121875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
54. 0.000000000000028421709430403819934844970703125" x 0.0000000000000426325641456010111522673705609375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
55. 0.0000000000000142108547152019099674224853515625" x 0.00000000000002131628207280050557613368687296875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
56. 0.000000000000007105427357600954983711242767578125" x 0.0000000000000106581410364002527880668434384375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
57. 0.0000000000000035527136788004774918556213837890625" x 0.0000000000000053290705182001263940334217171875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
58. 0.00000000000000177635683940023874592778069189453125" x 0.0000000000000026645352591000631970167108588671875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
59. 0.000000000000000888178419700119372963890345947265625" x 0.000000000000001332267629550031598508355429443359375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
60. 0.0000000000000004440892098500596864819451729736328125" x 0.0000000000000006661338147750157992541777147216796875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
61. 0.00000000000000022204460492502984324097258648681640625" x 0.00000000000000033306690738750789962708885736088671875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
62. 0.000000000000000111022302462514921620486293243408203125" x 0.000000000000000166533453693753949813544428680443359375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
63. 0.0000000000000000555111512312574608102431466217041015625" x 0.0000000000000000832667268468769748067722143402216796875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
64. 0.00000000000000002775557561562873040512157331085205078125" x 0.000000000000000041633363423438487403386107170110888671875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
65. 0.000000000000000013877787807814365202560786655426025390625" x 0.000000000000000020816681711719243701693053585055443359375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
66. 0.0000000000000000069388939039071826012803933277130126953125" x 0.0000000000000000104083408558596218508465267925272216796875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
67. 0.00000000000000000346944695195359130064019666385650634765625" x 0.000000000000000005204170427929810925423263396263610888671875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
68. 0.000000000000000001734723475976795650320098331928253173828125" x 0.00000000000000000260208521396490546271163169813180443359375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
69. 0.00000000000000000086736173798839782516004916596441265890625" x 0.000000000000000001301042606982452731355815849065902216796875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
70. 0.000000000000000000433680868994198912580024582982206329453125" x 0.00000000000000000065052130349122636567778792453295110888671875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
71. 0.00000000000000000021684043449709945629001229149110316471875" x 0.00000000000000000032526065174561318283889396226647555443359375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
72. 0.000000000000000000108420217248549728145006145745551582359375" x 0.000000000000000000162630325872806591419446981133237777216796875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
73. 0.0000000000000000000542101086242748640725030728727757911796875" x 0.000000000000000000081315162936403295709723490566618888671875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
74. 0.0000000000000000000271050543121374320362515364363878958984375" x 0.0000000000000000000406575814682016478548617452833094443359375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
75. 0.00000000000000000001355252715606871601812576821819394794921875" x 0.000000000000000000020328790734100823927430872641654722216796875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
76. 0.000000000000000000006776263578034358009062884109096973974609375" x 0.0000000000000000000101643953670504119637154363208273610888671875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
77. 0.0000000000000000000033881317890171790045314420545484869873046875" x 0.000000000000000000005082197683525205981857718160413680443359375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
78. 0.00000000000000000000169406589450858950226572102727424349365234375" x 0.0000000000000000000025410988417626029909288590802068402216796875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
79. 0.000000000000000000000847032947254294751132860513636371746826171875" x 0.000000000000000000001270549420881301495461429540103420110888671875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
80. 0.0000000000000000000004235164736271473755664302568181858734130890625" x 0.000000000000000000000635274710440650747730714770051710055443359375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
81. 0.00000000000000000000021175823681357368778321512840909293670654453125" x 0.0000000000000000000003176373552200250373653573850258550277216796875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
82. 0.000000000000000000000105879118406786843889157564204546468353271875" x 0.0000000000000000000001588186776100125186826686925129275110888671875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
83. 0.0000000000000000000000529395592033934219445787821022732341766359375" x 0.0000000000000000000000794093388050062593413343462564637555443359375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
84. 0.00000000000000000000002646977960169671097228939105113661708831796875" x 0.000000000000000000000039704669402503129670667173128231777216796875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
85. 0.0000000000000000000000132348898008483554861144955255568085415890625" x 0.00000000000000000000001985233470125156353353358656411318888671875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
86. 0.00000000000000000000000661744490042417774305724776277840427079453125" x 0.00000000000000000000000992616735062578176676667828205659443359375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
87. 0.000000000000000000000003308722450212088871528623881389202134747265625" x 0.0000000000000000000000049630836753128908833833391410282972216796875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
88. 0.0000000000000000000000016543612251060443857643119406946010673736328125" x 0.000000000000000000000002481541837656445441691669570514148610888671875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
89. 0.0000000000000000000000008271806125530221928821559703473005336843408203125" x 0.000000000000000000000001240770918828222720845584785257072216796875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
90. 0.000000000000000000000000413590306276511096441077985173650266843408203125" x 0.00000000000000000000000062038545941411136042279239262853610888671875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
91. 0.0000000000000000000000002067951531382555482205389925868251334217041015625" x 0.0000000000000000000000003101927297070556802113961963142680443359375" Sign	1	\$0.00	\$0.00	Standard rectangular sign
92. 0.00000000000000000000000010339757656912777411026949629341256671085078125" x 0.00000000000000000000000015509636485352784010569809815713402216796875" Sign	1	\$0.00	\$0.00	Standard rectangular sign
93. 0.000000				

# **PRELIMINARY PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0042L  
PM: 29.5-30.0  
EA: 02-0E090K

## **Section 4: Specialty Items**

	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	
Place AC Dike (Type F)	0	Ft	\$6.25	\$0	
RE Office	1	LS	\$4,000	\$4,000	
MSE Retaining Wall w/ Aesthetics	0	Ft	\$0	\$0	(In Structure portion)
Tubular Bicycle Railing	0	Ft	\$63	\$0	
Closed Circuit Television	0	LS	\$130,000	\$0	
Hazardous Material Survey	1	LS	\$15,000	\$15,000	
Migratory Bird / Mammal Mitigation	1	LS	\$20,000	\$20,000	
Wetlands	1	LS	\$50,000	\$50,000	
DFG 1602 Permit	1	LS	\$4,000	\$4,000	
CVRWQCB 401 Permit	1	LS	\$500	\$500	
Riparian & Upland Vegetation	1	LS	\$50,000	\$50,000	

<b>Total Specialty Items(Section 4):</b>	<b>\$143,500</b>
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## **Section 5: Traffic Items:**

	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>"A" TC Elements</u>
X Traffic Control System	185	Day	\$1,800	\$333,000	\$749,400
X Maintain Traffic Control	185	Day	\$900	\$166,500	
COZEED	1	LS	\$150,000	\$150,000	
Remove Traffic Stripe	2,000	Ft	\$1.00	\$2,000	
Striping/Pavement Markers & Markings	7,488	Ft	\$0.4	\$2,900	
Construction Area Signs	1	LS	\$10,000	\$10,000	
Temp. Barrier Rail (Type K)	2,000	Ft	\$35	\$70,000	
Temp. Striping	1	LS	\$1,500	\$1,500	
Transition Railing (Type WB)	0	EA	\$3,500	\$0	
Remove MBGR	0	Ft	\$9.50	\$0	
MBGR	50	Ft	\$50	\$2,500	
Temporary Crash Cushions	0	LS	\$4,000	\$0	"D" Approach Guardrail
Terminal System (Type SRT)	1	EA	\$2,500	\$2,500	\$5,000
Signs & Object Markers	1	LS	\$3,500	\$3,500	
Icy Curve Warning Sensors	0	LS	\$254,497	\$0	
Temporary Signal System	0	LS	\$250,000	\$0	
Portable Changeable Message Signs	1	LS	\$5,000	\$5,000	
Project Specific Media Releases	1	LS	\$2,500	\$2,500	
Caltrans Worker Safety Media Fund	1	LS	\$2,500	\$2,500	

<b>Total Traffic Items(Section 5):</b>	<b>\$754,400</b>
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<b>SUBTOTAL (Sections 1-5):</b>	<b>\$1,208,004</b>
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ATTACHMENT A



# PRELIMINARY PROJECT COST ESTIMATE SUMMARY

PROJECT NO. 03-004-003  
PROJECT NAME: 03-004-003  
DATE: 03-03-2010  
BY: 03-03-2010

Section 1: General Construction		Subtotal of Section 1: \$1,700,000	2	\$200,000
Section 2: Roadway Construction		Subtotal of Section 2: \$1,700,000	2	\$200,000
Section 3: Bridge Construction		Subtotal of Section 3: \$1,700,000	2	\$200,000
Section 4: Waterway Construction		Subtotal of Section 4: \$1,700,000	2	\$200,000
Section 5: Miscellaneous Construction		Subtotal of Section 5: \$1,700,000	2	\$200,000
Section 6: Professional Fees		Subtotal of Section 6: \$1,700,000	2	\$200,000
Section 7: Contingency		Subtotal of Section 7: \$1,700,000	2	\$200,000
Section 8: Construction Management		Subtotal of Section 8: \$1,700,000	2	\$200,000
Section 9: Construction Insurance		Subtotal of Section 9: \$1,700,000	2	\$200,000
Section 10: Construction Bonds		Subtotal of Section 10: \$1,700,000	2	\$200,000
Section 11: Construction Taxes		Subtotal of Section 11: \$1,700,000	2	\$200,000
Section 12: Construction Other		Subtotal of Section 12: \$1,700,000	2	\$200,000
Section 13: Construction Total		Subtotal of Section 13: \$1,700,000	2	\$200,000
Section 14: Construction Grand Total		Subtotal of Section 14: \$1,700,000	2	\$200,000

ATTACHMENT A

ALTERNATIVE A

**PRELIMINARY  
PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0042L  
PM: 29.5-30.0  
EA: 02-0E090K

**Section 6: Minor Items:**

Subtotal of sections 1-5=      \$1,208,004      5      \$60,000  
(0%-10%)

Total Minor Items(Section 6):	\$60,000
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☒ **Section 7: Time Related Overhead / Partnering:**

Subtotal of sections 1-5=      \$1,208,004      7.38      \$89,000  
(7%-10%)

Total Time Related Overhead(Section 7):	\$89,000
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**Section 7: Roadway Mobilization:**

Subtotal of sections 1-5=      \$1,208,004  
Minor Items=      \$60,000  
Sum=      \$1,268,004      5      \$63,000  
(0%-10%)

Total Roadway Mobilization(Section 7):	\$63,000
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**Section 8: Roadway Additions:**

**Supplemental**

Subtotal of sections 1-5=      \$1,208,004  
Minor Items=      \$60,000  
Sum=      \$1,268,004      10      \$127,000  
(0%-10%)

**Contingencies**

Subtotal of sections 1-5=      \$1,208,004  
Minor Items=      \$60,000  
Sum=      \$1,268,004      25      \$317,000  
(10%-25%)

Total Roadway Additions(Section 8):	\$444,000
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6/18/2004 17:30	<b>TOTAL ROADWAY ITEMS (Total of Sections 1-8):</b>	<b>\$1,864,000</b>
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ATTACHMENT A

# **PRELIMINARY PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0042L  
PM: 29.5-30.0  
EA: 02-0E090K

## III STRUCTURES ITEMS

### **STRUCTURES**

	<u>No. 1</u>	<u>No. 2</u>	<u>No. 3</u>
Bridge Name	SIDEHILL VIADUCT		
Structure Type			
Width (new or width addition)	42.00		
Span Lengths	404.19		
Total Area	16,975.98		
Footing Type (Pile/Spread)			
Cost per square foot	\$ 415		
	<u>APS DATA</u>	<u>ADDITIONS</u>	<u>PSSR DATA</u>
(A) or (B): Total Cost for Structure	\$ 7,045,032		\$7,045,032
(E) MSE Wall Included in APS	\$ -		
Additional MSE Wall		\$0	\$0
(G) Bridge Removal	\$ 717,000		\$717,000
(D) Temporary Supports		\$0	\$0
(F) Tubular Bicycle Railing		\$0	\$0
SUB	\$ 7,762,032		\$7,762,032
Mobilization (10%)	\$ 776,203		\$776,203
Time Related Overhead (10%)	\$ 776,203		\$776,203
Contingencies (25%)	\$ 1,940,508		\$1,940,508
Subtotal Structure Items in APS:	\$ 11,254,946		

<b>Total PSSR Structure Items:</b>	<b>\$ 11,254,946</b>
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ATTACHMENT A

# **PRELIMINARY PROJECT COST ESTIMATE SUMMARY**

DIST-CO-RTE: 02-SHA-005  
BRIDGE No. 06-0042L  
PM: 29.5-30.0  
EA: 02-0E090K

## **IV RIGHT-OF-WAY**

	<u>Current Values</u> (Future Values)	<u>Escalation Rates</u>	<u>Escalated Values</u>
Acquisition, including excess lands and damages to remainder(s)	\$0	2.0 %	\$0
Mitigation acquisition & credits	\$124,500	0.0 %	\$0
Project development permit fees	\$24,000	0.0 %	\$0
Utility Relocation(State share)	\$0	5.0 %	\$0
Clearance /Demolition	\$0	0.0 %	\$0
Relocation Assistance (RAP)	\$0	0.0 %	\$0
Title and Escrow fees	\$0	N/A	\$0
Construction Contract work	\$0	0.0 %	\$0
Railroad Related Costs (See "O(f)" in District Work)	\$ -		
<b>Total right of Way (Current Cost)=</b>			<b>\$148,500</b>
<b>Total right of Way (Escalated Cost)=</b>			<b>\$0</b>





## PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT

### 1. Project Information

District 02	County SHA	Route 5	PM 29.7, 45.5	EA 0E090K
Project Title: Sidehill Viaduct / Dog Creek - Replacement/Seismic Retrofit				
Project Manager Carl Anderson			Phone # (530) 225-2154	
Project Engineer John Biendara			Phone # (530) 225-3041	
Environmental Office Chief/Manager Thomas Balkow			Phone # (530) 225-3405	
PEAR Preparer Amber Kelley			Phone # (530) 225-3510	

### 2. Project Description

#### Purpose and Need

This project proposes to improve the structural quality of the Sidehill Viaduct (06-0042L) and the Dog Creek Bridge (06-0027). Seismic retrofit and structural rehabilitation have been recommended for the Sidehill Viaduct due to the age and design of the structure, and a seismic event that occurred in 1998. A horizontal alignment modification is also required on this segment of highway due to a compound curve south of the viaduct. The Dog Creek Bridge requires deck rehabilitation due to deterioration (NB & SB), and seismic retrofit has been recommended for the northbound bridge due to the age of the structure.

#### Description of work

Work may include relocation of the Sidehill Viaduct on a new adjacent alignment. Seismic retrofit work on both the Viaduct and Dog Creek Bridge may include removal of bridge decks, modification to the abutments, foundations, soffits, bents, railings, and approach slabs. This work may involve lane and shoulder closures, right of way acquisition, new access roads, structure excavation, temporary channel crossing, tree and vegetation removal, and placement of new AC and polyester overlay.

#### Alternatives

Two alternatives have been proposed for the Dog Creek Bridge: a no build alternative, and a seismic retrofit alternative. Five alternatives have been proposed for the Sidehill Viaduct: a no build alternative, two seismic retrofit plus structure improvement alternatives, replacement of the structure on existing alignment, and construction of a new structure on an adjacent alignment.

### 3. Anticipated Environmental Approval

CEQA		NEPA	
<b>Environmental Determination</b>			
Statutory Exemption	<input type="checkbox"/>		
Categorical Exemption	<input type="checkbox"/>	Categorical Exclusion	<input checked="" type="checkbox"/>
<b>Environmental Document</b>			
Initial Study or Focused Initial Study with Negative Declaration or Mitigated ND	<input checked="" type="checkbox"/>	Environmental Assessment with Finding of No Significant Impact	<input type="checkbox"/>
Environmental Impact Report	<input type="checkbox"/>	Environmental Impact Statement	<input type="checkbox"/>
CEQA Lead Agency (if determined):		Caltrans	
Estimated length of time (months) to obtain environmental approval:		18 – 24 months	
Estimated person hours to complete identified tasks:		1.57 py	

### 4. Special Environmental Considerations

#### Sidehill Viaduct

- Bat surveys will be required
- A tree removal window will likely apply (September 1 – March 15)
- Timber fees may be associated with tree removal
- Historical features are present and may need to be assessed by an Architectural Historian
- Permits will not be required if jurisdictional channels are avoided

#### Dog Creek Bridge

- Bat surveys will be required
- Avoidance, minimization, and mitigation measures may be required to reduce impacts to bats
- Permits will be required if work is conducted within the ordinary high water mark of Dog Creek (401, 404, 1602)
- Mitigation may be required if riparian and wetland areas are impacted
- Mitigation may be required if cultural resources are impacted.

### 5. Anticipated Environmental Commitments

Permit issuance, permit conditions/compliance, biological/riparian/wetland mitigation, CEQA document filing fee = \$51,000. Archaeological mitigation and compliance cost estimate = \$10,000. Total \$61,000 (see Attachment B).



## **6. Permits and Approvals**

Impacts to jurisdictional waters will require permits from the Army Corps of Engineers, Regional Water Quality Control Board, and the Department of Fish and Game (404, 401, 1602). The project will require coordination with the United States Forest Service and a Special Use Permit may be needed.

## **7. Level of Effort: Risks and Assumptions**

The scoping document assumes:

- Day roosting bats are not anticipated at the Sidehill Viaduct
- Jurisdictional waters can be avoided at the Sidehill Viaduct
- Special design features and avoidance measures may be required for day roosting bats at the Dog Creek Bridge
- Permits will likely be required at the Dog Creek Bridge
- Mitigation will likely be required at the Dog Creek Bridge
- Special status plant species are not indicated at either location

The anticipated impacts, permitting requirements, and mitigation potential differ greatly between these two locations. If split into two separate projects, the Sidehill Viaduct may not be restricted to the lengthier schedule that Dog Creek will require.

## **8. PEAR Technical Summaries**

- 8.1 Land Use: The project is not anticipated to conflict with any existing land use plans or programs.
- 8.2 Growth: The project is not anticipated to increase, or impact growth.
- 8.3 Farmlands/Timberlands: The project is not anticipated to impact farmlands or timberlands.
- 8.4 Community Impacts: The project is not anticipated to result in community impacts.
- 8.5 Visual/Aesthetics: The project is not anticipated to cause significant visual impacts.
- 8.6 Cultural Resources:

### Sidehill Viaduct

There are no previously recorded cultural resources in the area of the viaduct. Due to the topology, it is anticipated that the sensitivity for encountering a pre-historic or historic archaeological site is low. The sensitivity for architectural resources is moderate. Within the project area, two resources have been identified as being greater than 50 years old: the viaduct, and the railroad facility. An architectural historian will need to assess both resources to determine if they are eligible for the National Register of Historic Places.

#### Dog Creek Bridge

Within the Dog Creek area there are seven pre-historic resources, three historic resources, and one architectural resource. In general, the area has seen extensive use in both pre-historic and historic times. The likelihood of encountering cultural resources in the Dog Creek area is high, however, the area has been subject to numerous past projects that have altered and affected the cultural resources. If all project activities are confined to the current state right of way, there is a low to moderate chance of impacting these resources.

- 8.7 Hydrology and Floodplain: A floodplain evaluation summary will be needed, and hydraulic studies may be required.
- 8.8 Water Quality and Storm Water Runoff: A drainage report and a storm water data report may be required.
- 8.9 Geology, Soils, Seismic and Topography: Continued involvement will be required from Bridge Design, Structures Maintenance, Structures Construction, and Geotechnical Services.
- 8.10 Paleontology: Paleontology issues are not anticipated.
- 8.11 Hazardous Waste/Materials: An Initial Site Assessment was conducted for this project and indicates that lead containing paint may be present on any exposed metal portions of the bridge structures, lead may be found in the thermoplastic paint used for pavement marking, and aerially deposited lead may exist within the highway shoulder soils due to the historical use of leaded gasoline. If these leads are found to be present, the project will require a Lead Compliance Plan and Program, appropriate project specifications, and approved disposal facilities. There is potential for Asbestos Containing Material to be present within the bridge joints. If there is disturbance of these materials, a registered Asbestos Contractor will be required.
- 8.12 Air Quality: The project is not anticipated to impact air quality compliance.
- 8.13 Noise and Vibration: The project is not anticipated to increase noise or vibration levels.
- 8.14 Energy and Climate Change: The project does not increase vehicle capacity and will not induce climate change.
- 8.15 Biological Environment:

#### Sidehill Viaduct

For this structure and location, the biological impacts do not vary significantly among the four build alternatives. Bat utilization surveys will be required, as the viaduct structure will likely support temporary night roosting bats. Night roosting bats should not require significant project modifications or avoidance measures. Day roosting bats are not generally found on this type of structure, however if day utilization is found the project may require special avoidance, minimization, and



mitigation measures. The habitat along the existing and potential new alignment is not known to support any unique vegetation habitats or special status plants. The new alignment alternative will likely require a tree removal window (September 1 – March 15). There is one jurisdictional stream channel east of the proposed new alignment, but it appears to be outside of the area required for this alternative. Permits will not be required if jurisdictional waters are avoided.

#### Dog Creek Bridge

The exact nature of the column and spandrel work will determine impacts to jurisdictional waters. The pier columns are currently outside of the ordinary high water mark (OHWM). If bridge access and the work on the columns can be conducted outside of the OHWM, permits will not be required. If any work occurs within the OHWM permits will be required (401, 404, 1602). Also dependent upon access methods and the work areas needed, riparian and wetland impacts may occur. Bat utilization surveys will be required as the structure of this bridge is likely to support both daytime and nighttime roosting. After bat utilization surveys are conducted, an evaluation will be made to determine if bat presence will create the need for avoidance, minimization, and mitigation measures. Potential measures include: excluding bats from retrofit areas, creating work windows for retrofit areas, and replacing habitat features.

- 8.16 Cumulative Impacts: It is anticipated that impacts associated with this project will be less than significant. Avoidance and minimization measures will be used, and cumulative impacts will be analyzed as needed under CEQA and NEPA.
- 8.17 Context Sensitive Solutions: Context sensitive solutions may be incorporated into the project.

### **9. Summary Statement for PSR or PSR-PDS**

This project proposes to improve the structural quality of the Sidehill Viaduct (06-0042L) and the Dog Creek Bridge (06-0027), and includes six build alternatives as well as a no build alternative. The environmental resources do not vary greatly among the various build alternatives. Considerations identified in the PEAR include; tree removal windows for migratory birds; bat utilization surveys; riparian and wetland impacts; work in jurisdictional channels; permits (401, 404, 1602); and potential mitigation for cultural and historic resources, bat habitat, trees, riparian areas, and wetland impacts. Environmental clearance will require an Initial Study/Negative Declaration under CEQA and a Categorical Exclusion under NEPA. The time required for environmental studies and preparation of the clearance document is 18-24 months. Permits will be required and the project schedule should include 12 months between PA&ED and RTL for this process.

### **10. Disclaimer**

This Preliminary Environmental Analysis Report (PEAR) provides information to support programming of the proposed project. It is not an environmental determination or document. Preliminary analysis, determinations, and estimates of mitigation costs are based on the project description provided in the Project Study Report (PSR). The estimates and conclusions in the PEAR are approximate and are based on cursory

ATTACHMENT B



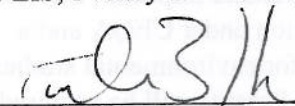
analyses of probable effects. A reevaluation of the PEAR will be needed for changes in project scope or alternatives, or in environmental laws, regulations, or guidelines.

### 11. List of Preparers

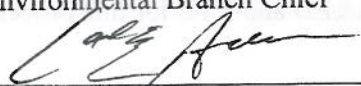
Cultural Resources specialist Russ Adamson	Date: 5/21/2009
Biologist Daniel Whitley	Date: 8/13/2009
Community Impacts specialist N/A	Date:
Noise and Vibration specialist N/A	Date:
Air Quality specialist N/A	Date:
Paleontology specialist/liaison N/A	Date:
Water Quality specialist Unassigned	Date:
Hydrology and Floodplain specialist Unassigned	Date:
Hazardous Waste/Materials specialist Tom Graves	Date: 8/3/2009
Visual/Aesthetics specialist N/A	Date:
Energy and Climate Change specialist N/A	Date:
Other:	Date:
PEAR Preparer (Name and Title) Amber Kelley, Associate Environmental Planner R1	Date: 11/18/2009

### 12. Review and Approval

I confirm that environmental cost, scope, and schedule have been satisfactorily completed and that the PEAR meets all Caltrans requirements. Also, if the project is scoped as an EA or EIS, I verify that the HQ DEA Coordinator has concurred in the Class of Action.

  
\_\_\_\_\_  
Environmental Branch Chief

Date: 11/25/09

  
\_\_\_\_\_  
Project Manager

Date: 12/9/09

### ATTACHMENTS:

Attachment A: Estimated Resources by WBS Code

Attachment B: PEAR Mitigation and Compliance Cost Estimate

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
RIGHT OF WAY DATA SHEET

Date: November 21, 2010

02-SHA-5-PM 45.54

E.A. 0E090

Seismic retrofit of Dog Creek Bridge #06-0027



1. Right of Way Cost Estimate:

	Current Value Future Use	Escalation Rate	Escalated Value
A. Total Acquisition Cost	\$8,750	5%	\$11,251
B. Mitigation acquisition & credits	\$15,000	5%	\$19,288
C. Project Development Permit Fees	\$9,000	5%	\$11,573
Subtotal	\$32,750		\$42,112
D. Utility Relocation (State Share) (Owner's share: _____)	\$0		\$0
E. Relocation Assistance (RAP)	\$0		\$0
F. Clearance/Demolition	\$0		\$0
H. Title & Escrow	\$0		\$0
I. Total Estimated Right of Way Cost	\$32,750	Rounded	\$42,100
J. Construction Contract Work	\$0		

2. Current Date of Right of Way Certification

January 15, 2016

3. Parcel Data:

Type	Dual/Appr	Utilities	RR Involvements
X 0		U4 - 1 0	None
A 1		- 2 0	C&M Agrmt
B 0		- 3 0	Svc Contract
C 0	0	- 4 0	Easements
D 0	0	U5 - 7 3	Rights of Entry
		- 8 0	Clauses
		- 9 0	
Total 1			
Areas:			Misc. R/W Work
R/W: 0.681 Ac.			RAP Displ N/A
Excess: N/A	No. Excess Pcls: 0		Clear/Demo N/A
Mitigation: N/A			Const Permits N/A
			Condemnation 0
			USA Involvement Yes

ATTACHMENT C



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
RIGHT OF WAY DATA SHEET

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4. Are there any major items of construction contract work?

Yes \_\_\_\_\_ No X

5. Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc.).

No new permanent right of way is required, however a temporary construction easement will be necessary at Dog Creek for storage. Project crosses through USFS Lands.

6. Are any properties acquired for this project expected to be rented, leased, or sold?

Yes \_\_\_\_\_ No X

7. Is there an effect on assessed valuation?

No X

Yes \_\_\_\_\_

Not Significant \_\_\_\_\_

8. Are utility facilities or rights of way affected?

Yes X

No \_\_\_\_\_

Utility relocations are not anticipated; however, utility verifications will be required.

9. Are railroad facilities or rights of way affected?

Yes \_\_\_\_\_

No X

10. Were any previously unidentified sites with hazardous waste and/or material found?

Yes \_\_\_\_\_ None Evident X

11. Are RAP displacements required?

Yes \_\_\_\_\_

No X

No. of single family \_\_\_\_\_

No. of business/nonprofit \_\_\_\_\_

No. of multi-family \_\_\_\_\_

No. of farms \_\_\_\_\_

Based on Draft/Final Relocation Impact Statement/Study dated N/A  
it is anticipated that sufficient replacement housing (will/will not) be available without  
Last Resort Housing.

12. Are there material borrow and/or disposal sites required?

Yes \_\_\_\_\_ No X

13. Are there potential relinquishments and/or abandonments?

Yes \_\_\_\_\_ No X

14. Are there any existing and/or potential airspace sites?

Yes \_\_\_\_\_ No X

15. Indicate the anticipated Right of Way schedule and lead time requirements. (Discuss if district proposes less than PMCS lead time and/or if significant pressures for project advancement are anticipated.)

Right of Way Lead Time will require a minimum of 12 months after we receive first appraisal maps, utility conflict maps, and the necessary environmental clearance and freeway agreements have been approved and obtained. Additionally a minimum of 9 months will be required after receiving the last appraisal map to Right of way for certification.

ATTACHMENT C





## RIGHT OF WAY DATA SHEET

16. Is it anticipated that Caltrans will perform all Right of Way work?

Yes X No       

Evaluation Prepared By:

Right of Way:

Kelly Austin

Kelly Austin

Date

11-22-10

Reviewed By:

RW Project Coordinator:

Cindy Vincelli

Cindy Vincelli

Date

11-23-10

I have personally reviewed this Right of Way Data Sheet and all supporting information. I certify that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper, subject to the limiting conditions set forth, and I find this Data Sheet to be complete and current.

Lisa Harvey

LISA HARVEY,  
Senior Right of Way Agent  
Project Delivery Branch  
Redding

12-1-10

Date

ATTACHMENT C



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
RIGHT OF WAY DATA SHEET

Date: December 3, 2010

02-SHA-5-PM 29.72  
E.A. 0E090  
Realignment of Sidehill Viaduct #06-0042L



1. Right of Way Cost Estimate:

	Current Value Future Use	Escalation Rate	Escalated Value
A. Total Acquisition Cost	\$18,750	5%	\$24,071
B. Mitigation acquisition & credits	\$15,000	5%	\$19,257
C. Project Development Permit Fees	\$9,000	5%	\$11,554
Subtotal	\$42,750		\$54,883
D. Utility Relocation (State Share) (Owner's share: _____)	\$0		\$0
E. Relocation Assistance (RAP)	\$0		\$0
F. Clearance/Demolition	\$0		\$0
H. Title & Escrow	\$0		\$0
I. Total Estimated Right of Way Cost	\$42,750	Rounded	\$54,900
J. Construction Contract Work	\$0		

2. Current Date of Right of Way Certification

January 15, 2016

3. Parcel Data:

Type	Dual/Appr	Utilities	RR Involvements
X 0		U4 - 1 0	None
A 1		- 2 0	C&M Agrmt
B 0		- 3 0	Svc Contract
C 0	0	- 4 0	Easements
D 0	0	U5 - 7 3	Rights of Entry
		- 8 0	Clauses
		- 9 0	
Total 1			
Areas:			Misc. R/W Work
R/W: N/A			RAP Displ N/A
Excess: N/A			Clear/Demo N/A
Mitigation: N/A		No. Excess Pcls: 0	Const Permits N/A
			Condemnation 0
			USA Involvement Yes

ATTACHMENT C





STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
RIGHT OF WAY DATA SHEET

---

4. Are there any major items of construction contract work?

Yes \_\_\_\_\_ No X

5. Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc.).

No new permanent right of way is required. Project crosses through USFS Lands. Any timber removed will need to be paid for prior to removal.

6. Are any properties acquired for this project expected to be rented, leased, or sold?

Yes \_\_\_\_\_ No X

7. Is there an effect on assessed valuation?

No X

Yes \_\_\_\_\_

Not Significant \_\_\_\_\_

8. Are utility facilities or rights of way affected?

Yes X

No \_\_\_\_\_

Utility relocations are not anticipated; however, utility verifications will be required.

9. Are railroad facilities or rights of way affected?

Yes X

No \_\_\_\_\_

10. Were any previously unidentified sites with hazardous waste and/or material found?

Yes \_\_\_\_\_ None Evident X

11. Are RAP displacements required?

Yes \_\_\_\_\_

No X

No. of single family \_\_\_\_\_

No. of business/nonprofit \_\_\_\_\_

No. of multi-family \_\_\_\_\_

No. of farms \_\_\_\_\_

Based on Draft/Final Relocation Impact Statement/Study dated N/A  
it is anticipated that sufficient replacement housing (will/will not) be available without  
Last Resort Housing.

12. Are there material borrow and/or disposal sites required?

Yes \_\_\_\_\_ No X

13. Are there potential relinquishments and/or abandonments?

Yes \_\_\_\_\_ No X

14. Are there any existing and/or potential airspace sites?

Yes \_\_\_\_\_ No X

15. Indicate the anticipated Right of Way schedule and lead time requirements. (Discuss if district proposes less than PMCS lead time and/or if significant pressures for project advancement are anticipated.)

Right of Way Lead Time will require a minimum of 12 months after we receive first appraisal maps, utility conflict maps, and the necessary environmental clearance and freeway agreements have been approved and obtained. Additionally a minimum of 9 months will be required after receiving the last appraisal map to Right of way for certification.

ATTACHMENT C



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
RIGHT OF WAY DATA SHEET

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16. Is it anticipated that Caltrans will perform all Right of Way work?

Yes X No       

Evaluation Prepared By:

Right of Way:

Kelly Austin  
Kelly Austin

Date 12-3-10

Reviewed By:

RW Project Coordinator:

Cindy Vincelli  
Cindy Vincelli

Date 12-6-10

I have personally reviewed this Right of Way Data Sheet and all supporting information. I certify that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper, subject to the limiting conditions set forth, and I find this Data Sheet to be complete and current.

Lisa Harvey

LISA HARVEY,  
Senior Right of Way Agent  
Project Delivery Branch  
Redding

12-15-10

Date

ATTACHMENT C





# TRANSPORTATION MANAGEMENT PLAN DATA SHEET

**To:** John Biendara, PE  
Advance Planning, MS-4

**Date:** August 10, 2009

**File:** SHA-05-PM 29.5/30.49  
SHA-05-PM 45.0/46.0

**EA:** 02-0E090K

**From:** Department of Transportation  
District 2 - Office of Traffic Management

**Work:** Seismic Retrofit of -  
Sidehill Viaduct (06-0042L) **Revised**  
Dog Creek Bridge (06-0027L&R)

**NOTE:** This TMP datasheet revised to include Sidehill Viaduct structure replacement alternatives not evaluated in the original project report and change in construction year.

## 1. POLICY

The Caltrans Deputy Directive titled "Transportation Management Plans" (DD-60) establishes the current policy for mitigating traffic impacts resulting from construction, maintenance, encroachment permit, planned emergency restoration, locally or specially funded, or other activities. The directive states that Transportation Management Plans (TMPs) and contingency plans shall be completed for all work activities on the State highway system. **The purpose of this Transportation Management Plan Data Sheet is to ensure all anticipated TMP costs are included in the Project Initiation Document (PID).**

## 2. SCOPE OF WORK

This SHOPP project will address seismic deficiencies at 2 structures on I-5 in Shasta County. The proposed alternatives for each structure are as follows:

### SIDEHILL VIADUCT (06-0042L - SB structure only):

- Alt 1 - No Build
- Alt 2 - Seismic Retrofit (includes replace joint seals, reconstruct hinge seat, remove existing AC and replace with 3/4 inch polyester concrete overlay, install temporary supports, retrofit existing footings and soffit, provide footing tie-downs, retrofit existing columns with steel jacketing, retrofit bents with new CIDH concrete piles, and retrofit existing link beams)
- Alt 3 - Seismic Retrofit Plus (same as Alt 2, plus removal of existing bridge railing, install new barrier rail and bicycle rail, install new curve warning signage, install new roadway sensors and electronic speed signage).
- Alt 4 - New Structure on Existing Alignment (using stage construction, construct new structure)
- Alt 5 - New Structure on Adjacent Alignment (includes construction new structure east of existing alignment and realignment of roadway for tie-in at south end, and removal of existing structure)

### DOG CREEK BRIDGE (06-0027L&R - NB and SB structures):

- Alt 1 - No Build
- Alt 2 - Seismic Retrofit (includes sawcut of existing spandrel columns and installation of temporary supports, retrofit of bent caps, pier caps and spandrels, replace joint seals, installation of sliding polytetrafluorethylene bearings, and placing 3/4 inch polyester concrete overlay).

It is estimated that two construction seasons will be required to complete seismic retrofit of Dog Creek Bridge and replacement of the Sidehill Viaduct structure. Construction is currently scheduled to occur during 2011-2012.



### 3. FACILITY

**ROADWAY:** Interstate 5 is a multilane facility providing two 12 ft wide paved lanes, 5 ft inside and 10 ft outside paved shoulders for each direction of travel. The Sidehill Viaduct (L) structure is on the SB alignment with a 6% downgrade within an 850-ft radius curve posted with a 50 mph advisory speed. Dog Creek is on the undivided alignment just south of the Vollmers Interchange; the structure is tangent but connects to a 650-ft radius curve on the south end of the structure and a 660-ft radius curve on the north end. The regulatory speed limit for both bridge locations is 65 mph.

**TRAFFIC VOLUME DATA:** Traffic volumes at each bridge location are shown on the following table.

TRAFFIC VOLUMES							
LOCATION	AADT* (2008)	NB PEAK VOL		SB PEAK VOL		TRUCK VOL (2008)	PEAK VOL DATA SOURCE
		WD	WE	WD	WE		
Sidehill Viaduct PM R29.72	19,600	1,122	936	997	1,186	28%	TMS #273, SHA-05-PM 26.035, AUG 2008
Dog Creek Bridge PM 45.54	16,700	964	1,039	828	1,061	30%	TMS #179, SHA-05-PM 57.41, AUG 2008

\*AADT is for both directions.

#### STRUCTURES:

NAME	LOC CO-RT-PM	NO.	LENGTH (ft)	WIDTH (ft)
Sidehill Viaduct	SHA-5-PM R29.72	06-0042	396	39
Dog Creek Bridge	SHA-05-PM 45.54	06-0027	643	60

**RAMPS:** There are ramps within close proximity of the bridges. It is not known at this time if a ramp will be within the limits of traffic control or if any will need to be closed during bridge work. Traffic data for each of the ramps is shown below:

Ramp Name	LOC (PM)	Distance From Bridge	Widths		ADT (2006)	TRAFFIC VOL (6/06)	
			Lane (ft)	Shldrs (ft)		WD	WE
Turntable Bay SB Off-Ramp	R29.472	1100 ft	Single 12 ft	1-LT 8-RT	40	7	7
Vollmers SB On-Ramp	R45.875	875 ft	Single 12 ft	1-LT 8-RT	151	37	12
Vollmers NB Off-Ramp	R45.741	425 ft	Single 12 ft	1-LT 8-RT	180	30	16

WD = Weekday; WE = Weekend

**CENSUS:** There are census loops on each of the Vollmers ramps; however based on the current scope of work, these loops should not be impacted since operations will be confined to the bridges. Further information regarding census equipment can be obtained from Karen Carmo, Traffic Census, at 530-225-3042.

**ITS FIELD ELEMENTS:** The following ITS field elements are within the project limits. Further information regarding ITS field elements can be obtained from Ian Turnbull, Chief Office of ITS Engineering & Support, at 530-225-3320.

ELEMENT	LOCATION CO-RTE-PM	DESCRIPTION	POTENTIAL IMPACT?
CMS	PM R29.97	Elements Co-located 0.2 mi No of Sidehill Viaduct adjacent to SB #1 lane, near end of MBGR	Yes if Alt 5 selected - bridge replacement on new alignment
CCTV			
CCTV	PM R45.75	Adjacent to NB Vollmers Off-ramp	No if retrofit operations confined to bridge structure
RWIS	PM R45.86	0.3 Mi No of Dog Creek Br, RWIS adjacent to NB #2 lane in gore of Vollmers Off-ramp; roadway sensors at PM 45.85 (1 NB & 1 SB)	No if retrofit operations confined to bridge structure



#### 4. TRAFFIC IMPACTS

**TRAFFIC:** For both locations, the estimated carrying capacity of I-5 is 1,200 vph/lane; thus when a lane closure is in effect and volumes exceed this threshold, queueing occurs. Traffic volumes are slightly higher at the Sidehill Viaduct location than at the Dog Creek location. For both locations, traffic volumes approach 1,200 vph only during Sunday daytime hours, and may exceed 2,000 vph during some designated legal holidays (specifically July 4th, Thanksgiving, and Christmas).

LOCATION	ALT	ANTICIPATED TRAFFIC IMPACTS
Sidehill Viaduct	1	None - Conditions unchanged
	2	24-hour lane closures are expected due to the extent of work required (not known at this time if K-rail or Std Plan closures will be used). A lane closure could be accommodated during most weekdays without creating significant queues; however during summer weekends (mostly Sundays) and some designated legal holidays, moderate to major queueing is expected. It may be possible to schedule operations to provide full capacity during some designated legal holidays.
	3	Same as for Alt 2
	4	Anticipated use of K-rail during replacement operations. Due to narrow width of structure, reduced lane width & reduced speed zone are anticipated. These conditions will reduce through-put capacity during lane closure; thus some queueing may occur even when volumes are less than 1,200 vph. Also, due to long-term need for K-rail, it is not likely possible to avoid designated legal holidays, resulting in moderate to significant queueing. Truck restrictions may also apply (see Truck Impacts).
	5	Because structure is to be constructed on new alignment, traffic can remain on existing alignment without impact for most of the project. During tie-in of new roadway, mostly 24-hour Std Plan closures are anticipated (some use of K-rail may be necessary, but not long-term); thus it is likely that lane closures can be scheduled to avoid some designated legal holidays. Similar to Alt 2, a lane closure during most times can be accommodated without significant impact; however some queueing is expected during summer weekends (Sundays).
Dog Creek	1	None - Conditions unchanged
	2	24-hour lane closures are expected due to the extent of work required (not known at this time if K-rail or Std Plan closures will be used). A lane closure could be accommodated during most weekdays without creating significant queues; however during summer weekends (mostly Sundays) and most designated legal holidays, moderate to major queueing is expected. It may be possible to schedule operations to provide full capacity during some designated legal holidays.

**RAMPS:** For the Sidehill Viaduct location, if the SB Turntable off-ramp must be closed, motorists will be directed to the Bridge Bay interchange and back on NB I-5, a detour of approx. 4 miles. For the Dog Creek location, if the NB Vollmers off-ramp or SB on-ramp must be closed, motorists will be directed to the LaMoine interchange and back on SB I-5, a detour of approx. 7 miles. Motorists will have 5 to 10 minutes added to their regular route when using these detours. Due to the low traffic volumes on both ramps, delays to the few motorists for these detours is not significant.

**TRUCKS:** I-5 is part of the STAA National Network, able to accommodate the following: California Legal Trucks (the most common trucks) up to 8.5 ft wide, Annual permits trucks up to 12 ft wide are common and, Single Trip permit trucks between 12 ft and 16 ft in width occur several times a week. No restrictions are expected at the Dog Creek location because only Std Plan T-10 lane closures will be used. However, K-rail will likely be used at the Sidehill Viaduct location if Alt 4 is selected (replace bridge on existing alignment), thus placement must provide a 16 ft wide horizontal clearance to avoid truck restrictions. If the narrow width of the viaduct structure cannot accommodate a 16-ft wide traffic opening plus adequate width for construction operations, truck restrictions will be required, resulting in a long detour for some trucks. The other Sidehill Viaduct alternatives are not expected to result in truck restrictions.

**PEDESTRIANS:** Pedestrians are not permitted on I-5.

**BICYCLES:** Bicyclists are allowed on I-5 at both project locations. Although few bicyclists are expected due to the undeveloped setting, they must nevertheless be accommodated during construction. During a lane closure, bicyclists can use the outside shoulder within the closure until they reach the structure where the shoulder will be closed due to active construction. Bicyclists will then be forced into the open traffic lane to travel past the workzone. Although this will be required for only a short distance, it is not advisable to place bicyclists in close proximity to high speed vehicles. This situation will be exacerbated if K-rail is present.



## 5. TRAFFIC IMPACT MITIGATION

**LANE CLOSURES:** Lane closures on multilane highways are not generally allowed during times when the traffic volumes are high enough to affect the capacity of the remaining lanes below an acceptable level. Based on the expected traffic volumes, Std Plan T-10 lane closures will be allowed at all times except after 3:00 p.m. Fridays, the days preceding a designated legal holiday, weekends, and designated legal holidays. Use of K-rail should be scheduled to avoid designated legal holidays. Also, if feasible, K-rail should be removed during winter season to avoid impacts to snow removal operations.

**TRAFFIC CONTROL SURVEILLANCE:** If it is not feasible to provide full capacity during times when lane closures are not generally allowed (i.e., weekends and designated legal holidays), the Contractor shall be required to provide Traffic Control Surveillance during these times to monitor and work the expected queues.

**RAMP CLOSURES:** The PE should determine if any ramp closures will be required. If yes, then the PE will be required to include ramp closure and detour plans. Generally, ramp closures are not allowed for an extended period of time (i.e., over 24-hours) unless justified by the work and approved by the D2 Closure Committee.

**TMP PUBLIC INFORMATION CAMPAIGN:** If lane closures are expected to be in effect during designated legal holidays, funds shall be included to provide the public advance notification of expected delays. Outreach via local media and activation of Highway Advisory Radio (HAR) and CMSs messages may be warranted. Also, funds shall be included to provide public information to local residents impacted by possible ramp closures and detours.

**COORDINATE CONSTRUCTION:** On multilane facilities lane closures from adjacent projects are not allowed within 3 mi of each other in the same direction of travel to avoid traffic control conflicts and allow queues of traffic to return to a normal flow pattern between work zones. The following tables show nearby projects scheduled for construction in the years 2011 through 2012. Direct traffic control conflicts are indicated with several other bridge maintenance projects; thus the Project Manager(s) should work with the D2 DTM to resolve potential conflicts. TMP mitigation measures such as delayed start of construction, staging, or night work may be required.

SHA 05 – 2011 SCHEDULED CONSTRUCTION														
EA	LOCATION			EXPECTED DELAY (MINUTES)								PROJECT DESCRIPTION	TMP COMPLETED	
				MONTHS CONSTRUCTION IS SCHEDULED										
	CO	RTE	PM	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	TYPE OF WORK		
0E0904	SHA	5	R29.7			0	0	0	0	0	0	<b><i>This Project - Sidehill Viaduct Seismic Retrofit or Replacement</i></b>	Y	
2E3204	SHA	5	R29.29 R30.23			0	0	0	0	0	0	Bridge MTCE - Various including: Turntable Bay UC Power Line Rd UC	N	
2C2304	SHA	5	R30.6					0	0	0	0	Seismic Retrofit - Various including: Tunnel Gulch Sidehill Viaduct (NB)	DS	
378904	SHA	5	39.0/41.2	0	0	0	0	0	0	0	0	Antlers Bridge Replacement	Y	
0E0904	SHA	5	R45.5			0	0	0	0	0	0	<b><i>This Project - Dog Creek Br Seismic Retrofit</i></b>	Y	
				0	0	0	0	0	0	0	0			



## 5. TRAFFIC IMPACT MITIGATION (Cont.)

### COORDINATE CONSTRUCTION (Cont.)

SHA 05 – 2012 SCHEDULED CONSTRUCTION														
EA	LOCATION			EXPECTED DELAY (MINUTES)								PROJECT DESCRIPTION	TMP COMPLETED	
				MONTHS CONSTRUCTION IS SCHEDULED										
	CO	RTE	PM	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	TYPE OF WORK		
0E0904	SHA	5	R29.7	0	0	0	0	0	0	0	0	<i>This Project - Sidehill Viaduct Seismic Retrofit or Replacement</i>	Y	
2E3204	SHA	5	R29.29 R30.23	0	0	0	0	0	0			Bridge MTCE - Various including: Turntable Bay UC Power Line Rd UC	N	
2C2304	SHA	5	R30.6	0	0	0	0	0	0			Seismic Retrofit - Various including: Tunnel Gulch Sidehill Viaduct (NB)	DS	
378904	SHA	5	39.0/41.2	0	0	0	0	0	0	0	0	Antlers Bridge Replacement	Y	
0E0904	SHA	5	R45.5	0	0	0	0	0	0	0	0	<i>This Project - Dog Creek Br Seismic Retrofit</i>	Y	
				0	0	0	0	0	0	0	0			

**PORTABLE CHANGEABLE MESSAGE SIGNS (PCMSs):** PCMSs are recommended for Std Plan T-10 lane closures on I-5 due to the high approach speeds. Thus, the PE shall include a PCMS for each approach to a lane closure.

**COZEEP & REDUCED SPEED ZONE:** COZEEP can provide additional safety during Std Plan T-10 lane closures on I-5 when personnel is not shielded behind K-rail. A temporary speed zone reduction is another option available to the PE. Even if K-rail is present, the temporary roadway conditions (narrow width, curvilinear alignment on downgrade) may warrant a reduced speed zone. The need for COZEEP and/or a temporary speed zone reduction should be determined by the PE in collaboration with the CE and Kristi Westoby, Office of Traffic Safety Investigations (530-225-3113). If COZEEP is approved, the PE should include COZEEP funds in the contract. Also, signing for COZEEP and reduced speed zone requires an additional PCMS for each closure.

**RADAR TRAILER:** If a Speed Reduction Zone is approved and included in the project, it is recommended that a Radar Trailer be utilized to assist in getting motorists to lower their speed to the reduced limit. If used, the PE should include dollars in the project estimate to include the use of a Radar Trailer.

**WORKER SAFETY MEDIA CAMPAIGNS -** Worker safety media campaigns have been shown to reduce work zone vehicle collisions. Reducing work zone collisions will increase public and worker safety and reduce incident related congestion. With safety and reliability being the Departments number 1 and 2 goals respectively, it is appropriate for construction funding be set aside for worker safety media advertisements

**K-RAIL/STAGE CONSTRUCTION:** When K-rail is used, placement shall provide a minimum of 16 ft horizontal clearance to avoid truck restrictions. The TMP will include the typical SSP requiring notification of HQ Transportation Permits if the placement of K-rail results in reduced lane and shoulder width. Also, if feasible, schedule work requiring K-rail to provide the full width of the roadway during designated legal holidays (specifically July 4th, Thanksgiving, and Christmas), and during winter season.



## **5. TRAFFIC IMPACT MITIGATION (Cont.)**

**BICYCLISTS:** If present during active operations (or when TCS is provided), the Contractor can transport the bicyclists through the closure. No reasonable mitigation can be provided when a lane closure is in-effect but the Contractor is not present. Because of this, additional signage shall be included advising motorists to "Watch for Bicyclists".

**ITS FIELD ELEMENTS:** The PE shall show existing ITS elements on the plans. During work at Dog Creek, the RE shall ensure that the RWIS roadway sensors are not impacted by dropped debris (i.e., AC or concrete), grinding, or otherwise damaged. If Alt 5 (bridge replacement on new alignment) is selected for Sidehill Viaduct, the PE shall include replacement/relocation costs for the existing CCTV and CMS that will need to be relocated. (NOTE TO THE PE: This equipment is scheduled to be upgraded by project 02-3C680). Ian Turnbull, Chief Office of ITS Engineering & Support (530-225-3320) shall be contacted to determine approximate replacement costs for inclusion in the project estimate.

**COST:** In addition to typical traffic control system costs associated with Std Plan closures, the following should be included in the project estimate:

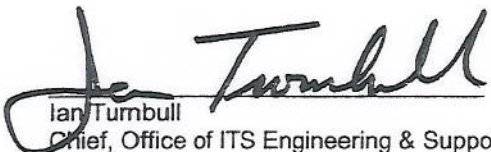
- **TRAFFIC CONTROL SURVEILLANCE (TCS):** Include TCS for each bridge location if/when closures are in effect on Sundays during July and August, and during designated legal holidays.
- **K-RAIL/STAGE CONSTRUCTION:** Include any potential increased costs associated with expedited work or removal of K-rail to avoid traffic control during holidays and winter season.
- **SPEED ZONE REDUCTION:** Include if requested by the CE and approved by the Traffic Safety Office (also include cost for radar trailer).
- **COZEEP:** Include funds for times/operations when CHP unit(s) will be present.
- **PORTABLE CMSs:** Include cost of PCMSs during Std Plan lane closures (include additional PCMS for COZEEP/speed zone reduction if approved).
- **TMP PUBLIC INFORMATION:** Include \$2,500 in item #066063-Transportation Management Plan Public Information to provide community outreach for ramp closures.
- **WORKER SAFETY MEDIA CAMPAIGN:** Include \$1,000 in item #066063-Transportation Management Plan Public Information for worker safety media campaigns.
- **BICYCLISTS:** Include costs for inclusion of temporary bicycle signs.
- **ITS FIELD ELEMENTS:** Include replacement/relocation costs of CCTV and CMS at Sidehill Viaduct if Alt 5 selected.
- **CONTINGENCY COSTS:** Contingency costs for equipment breakdown, shortage of materials, etc. should be included.

TMP: The TMP for this project will summarize the traditional traffic handling practices and other traffic mitigation strategies that will be implemented during construction that will include, but is not limited to: 2 week pre-notification of closures (Lane Closure Schedule), DTM evaluation of cumulative traffic corridor delays for multiple projects, California Highway Information Network (CHIN), Road Work Information Bulletin (RIB), Local Agency contacts, Permanent Changeable Message Sign (CMS) locations, permanent and portable Highway Advisory Radio (HAR) locations, CHP Commander contacts, incident response (accident, natural event) contacts, contingency plans, and maintenance contacts. **A TMP for this project is required and should be requested when the design is complete enough to determine specific traffic impacts but early enough to make design changes/additions required for traffic mitigation.**

Jan Meyer, ATP prepared this TMP Data Sheet. I have personally reviewed this TMP Data Sheet and all supporting information. I certify that the assumptions are reasonable and proper subject to the limiting conditions set forth and I find the Data Sheet complete and current.

  
Clint Burkenpas  
Chief, Office of Traffic Management  
District 2  
530-225-3245

8/26/09  
Date

  
Ian Turnbull  
Chief, Office of ITS Engineering & Support  
District 2  
530-225-3320

8/18/09  
Date

SEE ATTACHED RESOURCE SHEETS

1 - CMS

1 - CCTV

1 - ITS OVERSIGHT







Joey  
Aquino/HQ/Caltrans/CAGov  
01/04/2011 10:48 AM

To Oscar Cervantes/D02/Caltrans/CAGov@DOT  
cc  
bcc  
Subject Fw: 02-0e090k Sidehill Viaduct Replacement Cost Update

History: This message has been forwarded.

Per your request, here are the updated cost estimates for the replacement studies.

----- Forwarded by Joey Aquino/HQ/Caltrans/CAGov on 01/04/2011 10:47 AM -----



Jay Reid/HQ/Caltrans/CAGov

01/04/2011 10:44 AM

To Joey Aquino/HQ/Caltrans/CAGov@DOT  
cc  
Subject 02-0e090k Sidehill Viaduct PDF



2011.01.04\_02-0e090K\_Sidehill Viaduct.pdf

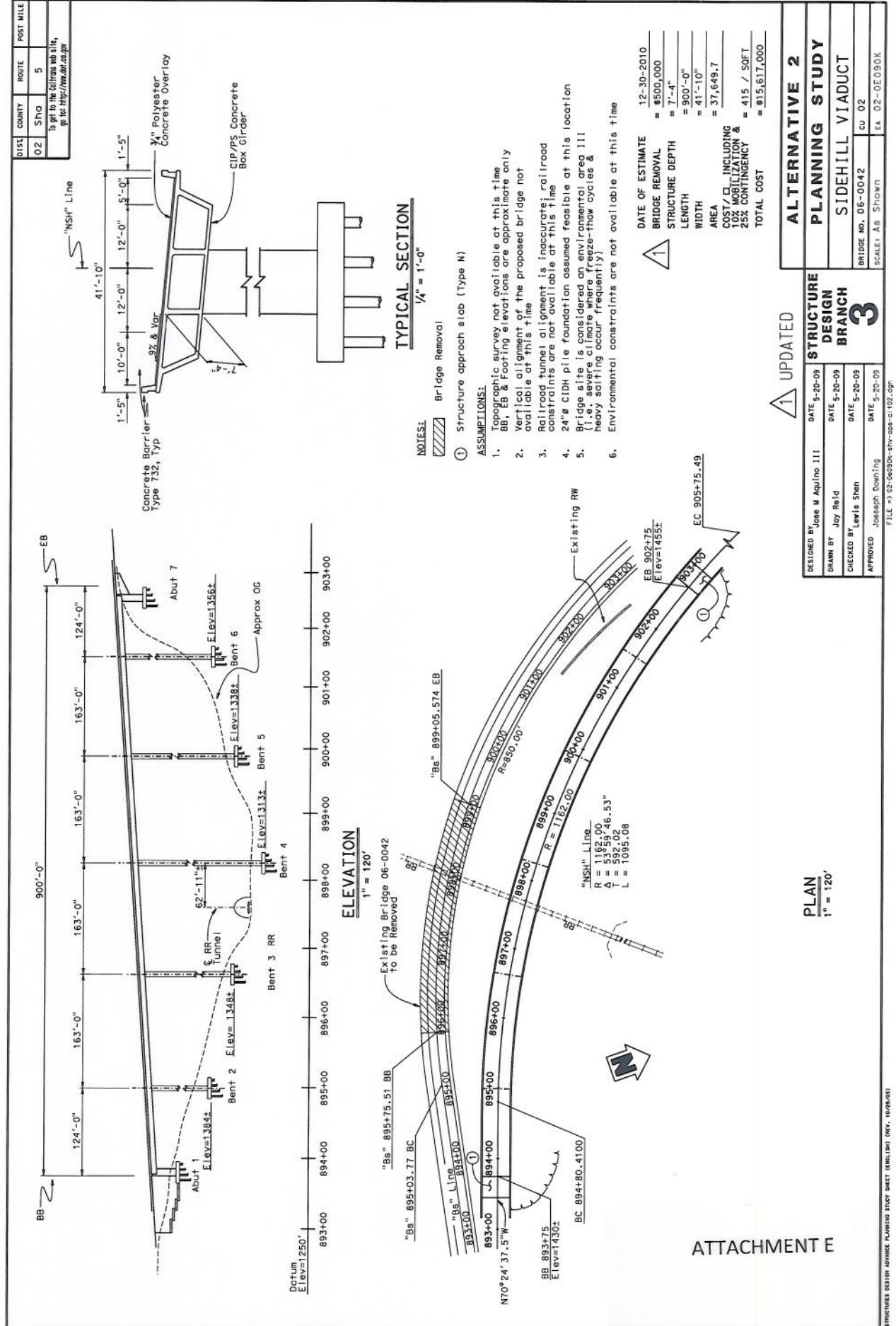
Thank You  
Jay Reid  
(916) 227-8741

1801 30th St  
Sacramento, Ca 95816

FMP 1, 4th floor  
Column 7G, Branch 3

ATTACHMENT E



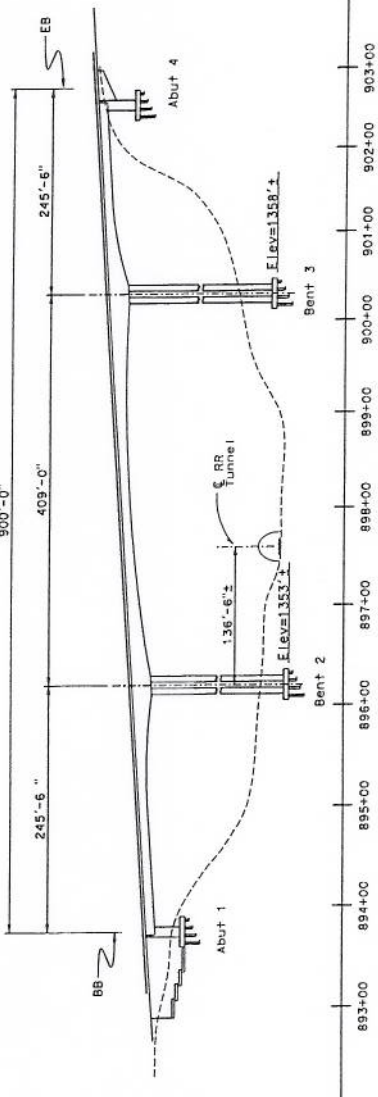




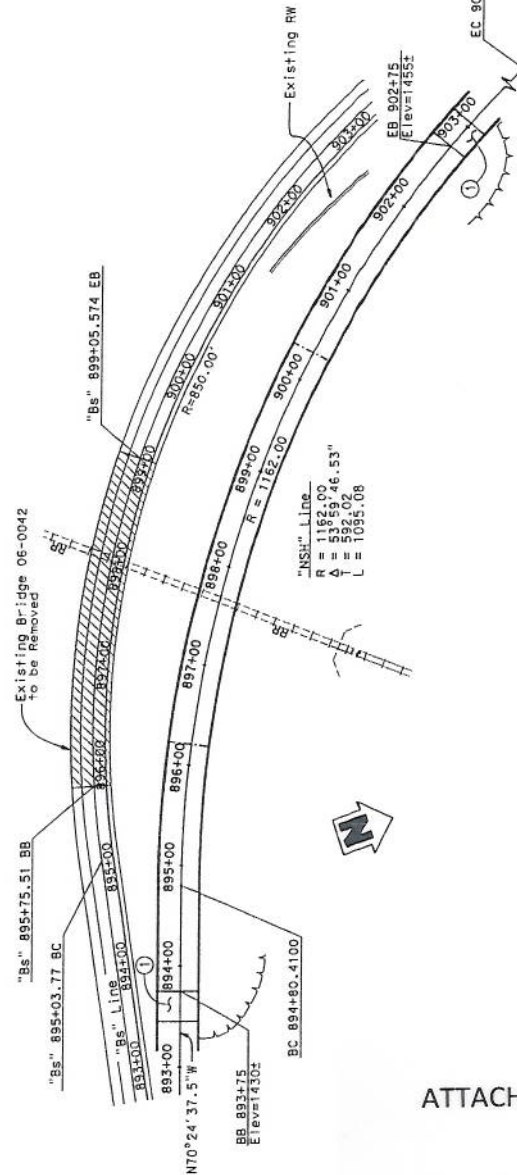


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To get to the Collins web site,  
go to: <http://www.dgs.ca.gov>

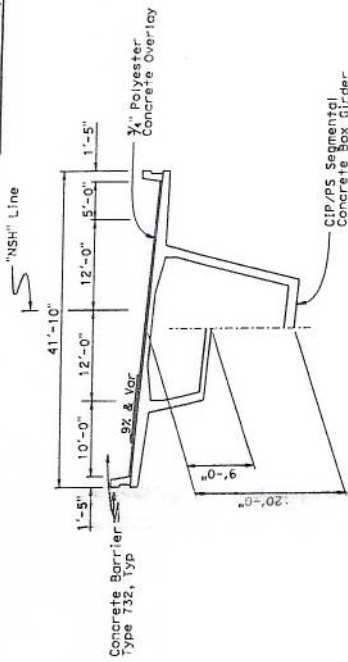


ELEVATION  
1" = 120'



ATTACHMENT E

TYPICAL SECTION  
1/4" = 1'-0"



NOTES:

1. Bridge Removal

2. Structure approach slab (Type N)

ASSUMPTIONS:

1. Topographic survey not available at this time
2. BB, EB Footing elevations are approximate only
3. Vertical alignment of the proposed bridge not available at this time
4. Railroad tunnel alignment is inaccurate; railroad constraints are not available at this time
5. 24" CIPH pile foundation assumed feasible at this location
6. Bridge site is considered an environmental area III (i.e. severe climate where freeze-thaw cycles & heavy siltation occur frequently)
7. Environmental constraints are not available at this time

DATE OF ESTIMATE	12-30-2010
BRIDGE REMOVAL	= \$500,000
STRUCTURE DEPTH	= 9'-0" - 20'-0"
LENGTH	= 900'-0"
WIDTH	= 41'-10"
AREA	= 37,649.7
COST / $\square$ INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	= \$614 / SQFT
TOTAL COST	= \$23,105,000

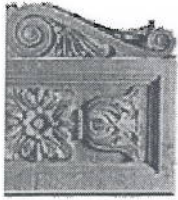
1 UPDATED

ALTERNATIVE 1
PLANNING STUDY
SIDEHILL VIADUCT
BRIDGE NO. 06-0042
CU 02
SCALE: As Shown
EA 02-0C090K

DESIGNED BY	Jose M. Aquino III	DATE	5-20-09
DRAWN BY	Joy Reid	DATE	5-20-09
CHECKED BY	Lewis Shen	DATE	5-20-09
APPROVED	Joseph Downing	DATE	5-20-09

PLAN  
1" = 120'





Joey  
Aquino/HQ/Caltrans/CAGov  
08/11/2009 09:43 AM

To John Biendara/D02/Caltrans/CAGov@DOT  
cc Steve Wiman/HQ/Caltrans/CAGov@DOT, Joe  
Downing/HQ/Caltrans/CAGov@DOT, John  
Stayton/HQ/Caltrans/CAGov@DOT  
bcc  
Subject SHV 06-0042L Replacement Alternative APS

State of California Business, Transportation and Housing Agency  
DEPARTMENT OF TRANSPORTATION

*"Caltrans improves mobility across California"*

## Memorandum

*Flex your power! Be energy efficient!*

JOHN H. BEINDARA, P.E.

**Date:**

August 11, 2009  
STIP and Specially Funded Oversight  
Office of Advance Planning

File: 02-SHA-5 PM 29.72  
DISTRICT 2 Redding

02-0E090K

Sidehill Viaduct

(06-0042L)

Replace

TO: JOSE M. AQUINO III, P.E.  
Senior Project Engineer, Bridge Design Branch 3  
Office of Bridge Design North  
Structure Design  
Division of Engineering Services MS#9

ATTACHMENT E





Subject: Advance Planning Study

We have completed your request to supplement a previous APS to seismically retrofit Sidehill Viaduct (06-0042L) with a replacement alternative. Two structure type alternatives are submitted below for your use:

Structure Type

APS estimated cost

CIP/PS Concrete Box Girder (Alt 2)

\$18,282,000.00

CIP/PS Segmental Concrete Box Girder (Alt 1)

\$28,999,000.00

Estimated costs include \$500,000 bridge removal, 10% Time related overhead, 10% mobilization, and 25% contingencies. Please use an escalation rate of 5.5% per year to project cost beyond midpoint of construction.

The following are the assumptions used in the development of the APS:

1. Existing and/or recent ground topographic surveys are unavailable at this time and assumptions were made for the overall geometry of the structure (e.g. bridge length, column heights, and foundation sizes).
2. It is assumed that there will be no restriction for falsework construction for Alternative 2.
3. Railroad Tunnel alignment shown is inaccurate. Railroad constraints are not available at this time.
4. 24" Diameter CIDH pile foundation assumed feasible at this location.
5. Bridge site is considered an environmental area III (i.e. severe climate where freeze-thaw cycles and heavy salting occur frequently)
6. Environmental constraints are not available at this time.
7. Required aesthetic features unknown and not considered at this time.

Please call me at (916) 227-8098 or email me through Lotus Notes if you wish to discuss this APS.



## Memorandum

*Flex your power!*  
*Be energy efficient!*

To: MARK MILLER  
NORTH REGION - ADVANCE PLANNING  
DISTRICT #2

Date: May 28, 2008

File: 02-SHA-5 PM R29.72 & 45.54  
EA #02-0E090K  
Dog Creek Bridge (Seismic Retrofit)  
Sidehill Viaduct (Seismic Retrofit)

From: JOSEPH E. DOWNING  
Bridge Design Branch #3  
Office of Bridge Design North  
Structure Design  
Division of Engineering Services MS #9-4/11G

Subject: Advance Planning Study Transmittal

Attached are two copies of the Advance Planning Study for the above referenced project as submitted to the Division of Engineering Services. Based upon the Preliminary Geotechnical and Seismic Reports and available as-built information, it has been determined that both bridges need to be seismically retrofitted. In addition to the seismic retrofit work, additional maintenance work consisting of deck rehabilitation and joint seal replacement was also included in the estimates.

The estimated construction cost, including 10% time-related overhead, 10% mobilization and 25% contingencies, is as follows:

Structure Name	Br. No.	Estimated Cost
Dog Creek Bridge (Seismic Retrofit)	06-0027	\$3,629,000
Sidehill Viaduct (Seismic Retrofit)	06-0042L	\$4,697,000
Total Cost =		\$8,326,000

The following table summarizes the projected total structure cost based on a 5.5% escalation rate:

Year	Escalated Cost Dog Creek Bridge	Escalated Cost Sidehill Viaduct
2009	\$3,829,000	\$4,955,000
2010	\$4,040,000	\$5,228,000
2011	\$4,262,000	\$5,516,000
2012	\$4,496,000	\$5,819,000
2013	\$4,743,000	\$6,139,000

The escalated structure cost is provided for informational purposes only and does not replace annual cost updates as required by Department policy.

ATTACHMENT E





This Advance Planning Study and associated cost estimate is based on the following assumptions:

1. The Seismic Design Criteria used to evaluate the existing structures is as listed below:

Bridge Name	Soil Type	Peak Bedrock Acceleration	Maximum credible earthquake moment magnitude
Dog Creek Bridge	C	0.2g	6.5
Sidehill Viaduct	C	0.5g	6.0

2. Structure Maintenance has indicated that in addition to the deck rehabilitation and joint seal replacement work currently being proposed, further investigation and coring of the existing structures is needed to fully identify the scope. District will be informed of any additional maintenance items that may be needed as a result of the pending investigations.
3. Estimate is based upon full year round construction with no restrictions imposed by permitting agencies.
4. District to capture costs associated with conforming to new deck surfaces due to deck rehabilitation work.

If you have any questions or if you need additional information regarding this study, please contact **Randy Bains** at Calnet 8-498-8328 or **Joe Downing** at Calnet 8-498-8430.

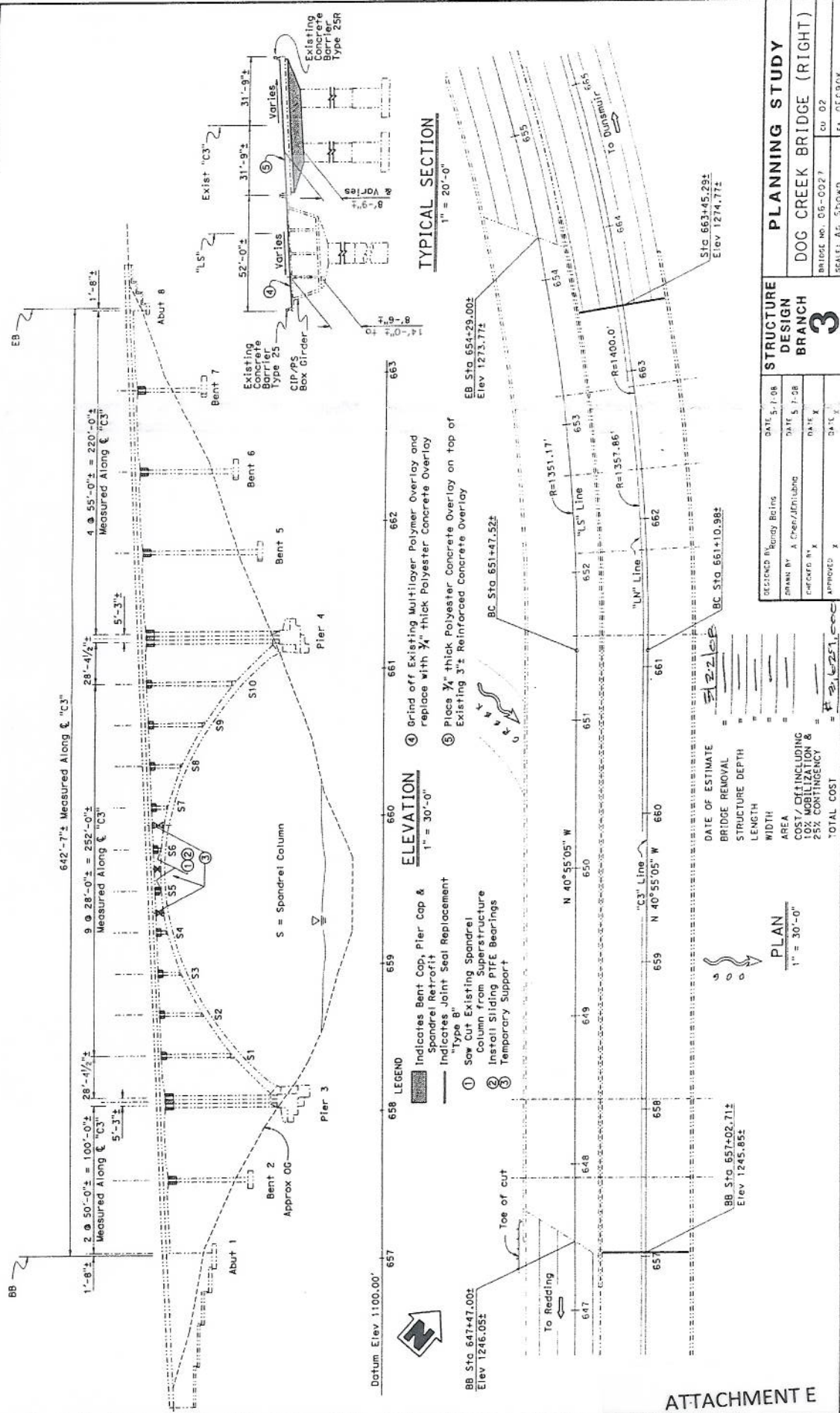
#### Attachments

- c: Eskinder Taddese, Project Coordination Engineer MS# 9-5/12F  
Tom Ostrom, Bridge Design Office Chief MS# 9-4/11G  
Steve Wiman, Technical Liaison Engineer MS# FM2-1/5C  
Erol Kaslan, Structure Maintenance & Investigations MS# 9-1/9I  
Kevin Wall, HA21 Program Coordinator MS# 9-1/9I  
Steve Altman, Structure Construction Assistant Deputy Division Chief MS# 9-2/11H  
Roy Bibbens, Geotechnical Services MS# 5



DIST	COUNTY	ROUTE	POST MILE
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To get to the Calltrans web site, go to: <http://www.calltrans.org>











**PROJECT THREAT AND OPPORTUNITY LISTING (ATTACHMENT F)**

Identification		Qualification / Quantification			Response Strategy		Control	
		(P) Probability	(I) Impact	(E) Exposure	Strategy			
(1) & (2)		(H) High	(M) Medium	(L) Low	(4)		(5)	
		(P) % or H/M/L	(I) \$1000 or H/M/L	(E) (P) x (I) or P/I	+Accept +Minimize Probability +Minimize Impact +Deflect +Avoid		Risk Response Actions including Advantages & Disadvantages of the action	
ID #	Threat / Opportunity Event						Responsibility (Risk Manager)	Status Interval or Milestone Checks Date, Status, & Review Comments
1	There may be changes in staff and or availability of staff.	M	H	MH	Minimize Impact		PM, PE, Senior staff	PDTs
2	Tree purchase for Sidehill Viaduct project with USFS.	L	M	LM	Minimize Probability		RW	PSE, PDT
3	Construction and support costs may escalate higher than the programmed amounts.	M	H	MH	Minimize Impact		PM, PE, programming	PDTs, SHOPP cycle
4	Coordinating activities with the railroad may cause Sidehill Viaduct project delays due to railroad's responsiveness.	M	M	MM	Minimize Probability		PM, PE, RW	PDTs



## PROJECT THREAT AND OPPORTUNITY LISTING (ATTACHMENT F)

Identification		Qualification / Quantification			Response Strategy		Control		
		Probability	Impact	Exposure					
(1) & (2)		(H)igh	(M)edium	(L)ow	Strategy		(6)		
		(P)robability	(I)mpact	(E)xposure					
		(P) % or H/M/L	(I) \$1000 or H/M/L	(E) (P) x (I) or P/I					
Threat / Opportunity Event					Risk Response Actions including Advantages & Disadvantages of the action		Responsibility (Risk Manager)	Status Interval or Milestone Checks	Date, Status, & Review Comments
ID #	5	Increased costs associated with storm water management issues.	M	L	Minimize Impact	Keep costs up to date; consider scope changes to lower costs; seek to program add'l dollars.	PM, PE, RE	PDTs	
6	Potential environmental issues that could affect construction work window include cultural resources, wetland/riparian issues and bat surveys at both sites.	M	M	MM	Minimize Impact	Environmental needs to perform surveys at the proper time: seek to program add'l dollars if avoidance, minimization & mitigation measures are required.	PM, PE, Env	PDTs	
7	The need for COZEOP will need to be determined by the Project Engineer	M	M	MM	Minimize Impact	Assure during PS&E that COZEOP will be investigated; seek to program add'l dollars.	PM, PE, Translab	PDTs	
8	Scope of work may change for potential drainage issues since hydraulic analysis was not performed during the PID stage. This is due to reduction of hydraulic PY allocated for this PID.	M	M	MM	Minimize Impact	Assure during PS&E that a hydraulic analysis is completed; seek to program add'l dollars.	PM, PE	PDTs	

**PROJECT THREAT AND OPPORTUNITY LISTING (ATTACHMENT F)**

Identification		Qualification / Quantification			Response Strategy		Control		
ID #	Threat / Opportunity Event	(P) Probability			Strategy (4)	Risk Response Actions including Advantages & Disadvantages of the action	Responsibility (Risk Manager)	Status Interval or Milestone Checks	Date, Status, & Review Comments
		(H) High	(M) Medium	(L) Low					
	(X) Refers to ESI Risk Management Tool Number								
	(1) & (2)								(6)
		(P) % or H/M/L	(I) \$1000 or H/M/L	(E) (P) x (I) or P/I	+Accept +Minimize Probability +Minimize Impact +Deflect +Avoid				
5	Increased costs associated with storm water management issues.	M	L	ML	Minimize Impact	Keep costs up to date; consider scope changes to lower costs; seek to program add'l dollars.	PM, PE, RE	PDTs	
6	Potential environmental issues that could affect construction work window include cultural resources, wetland/riparian issues and bat surveys at both sites.	M	M	MM	Minimize Impact	Environmental needs to perform surveys at the proper time; seek to program add'l dollars if avoidance, minimization & mitigation measures are required.	PM, PE, Env	PDTs	
7	The need for COZEPP will need to be determined by the Project Engineer	M	M	MM	Minimize Impact	Assure during PS&E that COZEPP will be investigated; seek to program add'l dollars.	PM, PE, Translab	PDTs	
8	Scope of work may change for potential drainage issues since hydraulic analysis was not performed during the PID stage. This is due to reduction of hydraulic PY allocated for this PID.	M	M	MM	Minimize Impact	Assure during PS&E that a hydraulic analysis is completed; seek to program add'l dollars.	PM, PE	PDTs	







DEPARTMENT OF TRANSPORTATION  
Structure Maintenance & Investigations

Page 1 of 5

Bridge Number : 06 0027  
Facility Carried: INTERSTATE 5  
Location : 02-SHA-005-45.54  
City :  
Inspection Date : 05/17/2010

Bridge Inspection Report

Inspection Type

Routine	FC	Underwater	Special	Other
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

STRUCTURE NAME: DOG CREEK

CONSTRUCTION INFORMATION

Year Built : 1956  
Year Widened: 1989  
Length (m) : 207.9

Skew (degrees): 0  
No. of Joints : 6  
No. of Hinges : 0

Structure Description: Original (1956): RC open spandrel arch span with continuous RC slab approach spans on RC column (2) bents and RC cantilever abutments, all on spread footings except abutments 1 on steel piles.

Widened (1989): Continuous (4 cell) CIP/PS haunched box girder on RC single column bents and RC seat abutments, all on CIDH piles except Abutment 4 on spread footings.

Span Configuration : Orig: 2 @ 15.2 m, 1 @ 91.4 m, 4 @ 16.8 m  
Wid: 1 @ 57.9 m, 1 @ 85.6 m, 1 @ 64.3 m

LOAD CAPACITY AND RATINGS

Design Live Load: MS-18+MOD OR HS-20+MOD

Inventory Rating: 32.4 metric tonnes

Operating Rating: 54 metric tonnes

Permit Rating : PPPPP

Posting Load : Type 3: Legal

Calculation Method: LOAD FACTOR

Calculation Method: LOAD FACTOR

Type 3S2: Legal

Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: 0.5 m br, 14.8 m, 0.6 m mb, 19.4 m, 0.5 m br

Total Width: 35.8 m

Net Width: 34.2 m

No. of Lanes: 4

Rail Description: Type 25 LT and RT Type 60A med barrier

Rail Code : 1001

Min. Vertical Clearance: Unimpaired

DESCRIPTION UNDER STRUCTURE

Channel Description: Cobbles and small boulders

CONDITION TEXT

WORK DONE

The There is a 1 m long X 50 mm deep spall with exposed epoxy coated rebar in the top of the left bridge rail approximately 15 m from Abutment 1 has been patched by the District 02 Bridge Crew since the previous inspection.

CONDITION OF STRUCTURE

There are numerous up to 5 mm wide (due to edge spalling) pattern cracks spaced 0.3 m to 0.5 m apart in the approach slab at the north abutment in the northbound lanes. There are also a few up to 10 mm wide (due to edge spalling) longitudinal cracks spaced 1 m apart in the approach slab.

The compression seal at the north abutment in the northbound lanes is deteriorated and has failed in adhesion over most of the length of the joint. There are also numerous minor edge spalls along the joint. The joint gap was 65 mm at 50 degrees F.

Printed on: Wednesday 07/14/2010 10:52 AM

06 0027/AAAG/18911

ATTACHMENT G





**CONDITION TEXT**

There are numerous up to 5 mm wide (due to edge spalling) pattern cracks spaced 150 mm to 0.5 m apart throughout the concrete deck overlay in the northbound lanes. There are also a few transverse reinforcing bars exposed for 1 m to 1.5 m in length in Lane 1 northbound near the south abutment. Shallow rebar cover appears to be causing the rebar exposure.

Lane 2 and the right shoulder of the right bridge deck were chained on 11/13/2008. Chaining indicated that an area totaling less than 1 percent of the concrete overlay is delaminated. Any delaminations found were very shallow and not more than 300 mm in diameter. Most of the delaminations were concentrated near Abutment 1. The bridge deck was also cored on 11/13/2008 for compressive strength and chloride analysis of both the overlay and original deck concrete. The cores were lost by the lab so the analysis was not performed. Coring has been re-scheduled.

The right wingwall at Abutment 1 has rotated approximately 50 mm outward at the top. There have been no changes in this previously noted condition.

There are a few scattered longitudinal cracks with efflorescence in the soffit of the original portion (right side) of the structure.

There is a 1 m tall incipient spall with 5 mm wide vertical cracks on the corners of the left columns at Bent 3 of the original portion (right side) of the structure near the base.

The multilayer polymer concrete overlay in the southbound lanes is delaminating in a few areas. The largest area is 3 m X 3 m in Lane 1 over Bent 2.

There are a few diagonal cracks with efflorescence in the soffit of the box girder adjacent to the bents. There are also a few scattered longitudinal and random cracks with efflorescence in the soffit of the box girder. There are transverse cracks with efflorescence in the soffit of the deck overhangs concentrated over the bents.

There is a 2 m long X 0.4 m wide area of unsound concrete in the left edge of the original right structure in Span 4 near Bent 4.

There is a 0.7 m tall X 0.4 m wide X 75 mm deep spall on the corner of Column 2 at Bent 2 of the original right structure near the ground. No rebar is exposed and no repairs are necessary at this time.

There are a few up to 1 mm wide vertical cracks in the face of both abutments of the widened portion of the structure.

There was up to 1 m of swift water flowing in Span 3 of the original right bridge and in Span 2 of the left widening. All the substructure elements are outside the influence of the channel. No underwater investigation was necessary.

**SAFE LOAD CAPACITY**

The arch rib between Bents 3 and 4 is currently being re-rated by the Caltrans Load Rating Branch due to the addition of a 4.5 inch concrete overlay in 1989.

ELEMENT INSPECTION RATINGS									
F#Elem	Element Description	Env	Total Units	Qty in each Condition State					
			Qty	St. 1	St. 2	St. 3	St. 4	St. 5	
101 18	Concrete Deck - Protected w/ Thin Overlay	3	3080 sq.m.	0	3080	0	0	0	
101 48	Concrete Slab - Protected w/ Rigid Overlay	3	3802 sq.m.	3802	0	0	0	0	



F#Elem	Element Description	Env Total Units			Qty in each Condition State				
		Qty			St. 1	St. 2	St. 3	St. 4	St. 5
101 104	P/S Conc Closed Web/Box Girder	3	208	m.	208	0	0	0	0
101 144	Reinforced Conc Arch	4	192	m.	192	0	0	0	0
101 205	Reinforced Conc Column or Pile Extension	3	38	ea.	30	8	0	0	0
101 215	Reinforced Conc Abutment	3	100	m.	100	0	0	0	0
101 225	Unpainted Steel Submerged Pile	2	1	ea.	1	0	0	0	0
101 252	Cast-In-Drilled Hole Concrete Pile	2	1	ea.	1	0	0	0	0
101 300	Strip Seal Expansion Joint	4	38	m.	38	0	0	0	0
101 302	Compression Joint Seal	4	40	m.	20	0	20		
101 304	Open Expansion Joint	4	40	m.	40	0	0	0	0
101 310	Elastomeric Bearing	2	10	ea.	10	0	0	0	0
101 311	Moveable Bearing (roller, sliding, etc.)	2	12	ea.	12	0	0	0	0
101 321	Reinforced Conc Approach Slab w/ or w/o AC Ovly	2	6	ea.	4	2	0	0	0
101 331	Reinforced Conc Bridge Railing	4	692	m.	691	1	0	0	0
101 358	Deck Cracking	2	1	ea.	0	0	1	0	

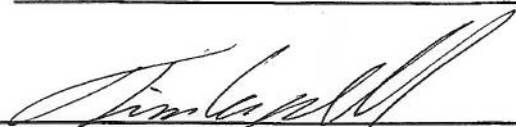
**WORK RECOMMENDATIONS**

RecDate: 05/17/2010 Action : Super-Patch spalls Work By: BRIDGE CREW Status : PROPOSED	EstCost: \$5,200 StrTarget: 2 YEARS DistTarget: EA:	Patch the 2 m long X 0.4 m wide area of unsound concrete in the left edge of the original right structure in Span 4 near Bent 4.
RecDate: 05/17/2010 Action : Sub-Patch spalls Work By: BRIDGE CREW Status : PROPOSED	EstCost: \$2,600 StrTarget: 2 YEARS DistTarget: EA:	Remove any loose concrete and patch the areas of unsound concrete on the corners of the left columns at Bent 3 of the original portion (right side) of the structure near the base.
RecDate: 02/15/2008 Action : Joints-Replace Work By: MAINT. CONTRACT Status : PROPOSED	EstCost: \$3,776 StrTarget: 2 YEARS DistTarget: EA:	Replace the compression type joint seal at Abutment 8 in the northbound lanes.
RecDate: 02/15/2008 Action : Deck-Resurface Work By: MAINT. CONTRACT Status : PROPOSED	EstCost: \$557,442 StrTarget: 2 YEARS DistTarget: EA:	Place a min 20 mm thick polyester concrete overlay on the deck. The multilayer polymer overlay needs to ground off the southbound lanes prior to the placement of the polyester concrete overlay.  Note: The scope of work may change for the northbound lanes after a more extensive deck investigation is performed.
RecDate: 07/01/2002 Action : Seismic-Retrofit Work By: STRAIN Status : INITIATED	EstCost: \$3,694,000 StrTarget: 2 YEARS DistTarget: EA: 0E090K	Arch bridge with non-ductile spandrel columns. Priority 4. Final Score 0.92.





Inspected By : T.Campbell



Registered Civil Engineer



Printed on: Wednesday 07/14/2010 10:52 AM

06 0027/AAAG/18911  
**ATTACHMENT G**



**STRUCTURE INVENTORY AND APPRAISAL REPORT**

## \*\*\*\*\* IDENTIFICATION \*\*\*\*\*

(1) STATE NAME- CALIFORNIA 069  
 (8) STRUCTURE NUMBER 06 0027  
 (5) INVENTORY ROUTE(ON/UNDER)- ON 111000050  
 (2) HIGHWAY AGENCY DISTRICT 02  
 (3) COUNTY CODE 089 (4) PLACE CODE 00000  
 (6) FEATURE INTERSECTED- DOG CREEK  
 (7) FACILITY CARRIED- INTERSTATE 5  
 (9) LOCATION- 02-SHA-005-45.54  
 (11) MILEPOINT/KILOMETERPOINT 45.54  
 (12) BASE HIGHWAY NETWORK- PART OF NET 1  
 (13) LRS INVENTORY ROUTE & SUBROUTE 000000000501  
 (16) LATITUDE 40 DEG 56 MIN 24 SEC  
 (17) LONGITUDE 122 DEG 25 MIN 24 SEC  
 (98) BORDER BRIDGE STATE CODE % SHARE %  
 (99) BORDER BRIDGE STRUCTURE NUMBER

## \*\*\*\*\* STRUCTURE TYPE AND MATERIAL \*\*\*\*\*

(43) STRUCTURE TYPE MAIN:MATERIAL- CONCRETE  
 TYPE- ARCH - DECK CODE 111  
 (44) STRUCTURE TYPE APPR:MATERIAL- CONCRETE CONT  
 TYPE- SLAB CODE 201  
 (45) NUMBER OF SPANS IN MAIN UNIT 1  
 (46) NUMBER OF APPROACH SPANS 6  
 (107) DECK STRUCTURE TYPE- CIP CONCRETE CODE 1  
 (108) WEARING SURFACE / PROTECTIVE SYSTEM:  
 A) TYPE OF WEARING SURFACE- CONCRETE CODE 1  
 B) TYPE OF MEMBRANE- NONE CODE 0  
 C) TYPE OF DECK PROTECTION- EPOXY CT REINF CODE 1

## \*\*\*\*\* AGE AND SERVICE \*\*\*\*\*

(27) YEAR BUILT 1956  
 (106) YEAR RECONSTRUCTED 1989  
 (42) TYPE OF SERVICE: ON- HIGHWAY 1  
 UNDER- RELIEF FOR WATERWAY 9  
 (28) LANES:ON STRUCTURE 04 UNDER STRUCTURE 00  
 (29) AVERAGE DAILY TRAFFIC 18200  
 (30) YEAR OF ADT 2000 (109) TRUCK ADT 32 %  
 (19) BYPASS, DETOUR LENGTH 16 KM

## \*\*\*\*\* GEOMETRIC DATA \*\*\*\*\*

(48) LENGTH OF MAXIMUM SPAN 91.4 M  
 (49) STRUCTURE LENGTH 207.9 M  
 (50) CURB OR SIDEWALK: LEFT 0.0 M RIGHT 0.0 M  
 (51) BRIDGE ROADWAY WIDTH CURB TO CURB 34.2 M  
 (52) DECK WIDTH OUT TO OUT 35.8 M  
 (32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 34.2 M  
 (33) BRIDGE MEDIAN- CLOSED NON-MOUNTABLE 3  
 (34) SKEW 0 DEG (35) STRUCTURE FLARED NO  
 (10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M  
 (47) INVENTORY ROUTE TOTAL HORIZ CLEAR 19.4 M  
 (53) MIN VERT CLEAR OVER BRIDGE RDWY 99.99 M  
 (54) MIN VERT UNDERCLEAR REF- NOT H/RR 0.00 M  
 (55) MIN LAT UNDERCLEAR RT REF- NOT H/RR 0.0 M  
 (56) MIN LAT UNDERCLEAR LT 0.0 M

## \*\*\*\*\* NAVIGATION DATA \*\*\*\*\*

(38) NAVIGATION CONTROL- NO CONTROL CODE 0  
 (111) PIER PROTECTION- CODE  
 (39) NAVIGATION VERTICAL CLEARANCE 0.0 M  
 (116) VERT-LIFT BRIDGE NAV MIN VERT CLEAR M  
 (40) NAVIGATION HORIZONTAL CLEARANCE 0.0 M

\*\*\*\*\* SUFFICIENCY RATING = 83.0  
 STATUS

HEALTH INDEX 92.8  
 PAINT CONDITION INDEX = N/A

## \*\*\*\*\* CLASSIFICATION \*\*\*\*\* CODE

(112) NBIS BRIDGE LENGTH- YES Y  
 (104) HIGHWAY SYSTEM- ROUTE ON NHS 1  
 (26) FUNCTIONAL CLASS- INTSTAT PRIN ART RURAL 01  
 (100) DEFENSE HIGHWAY- STRAHNET 1  
 (101) PARALLEL STRUCTURE- NONE EXISTS N  
 (102) DIRECTION OF TRAFFIC- 2 WAY 2  
 (103) TEMPORARY STRUCTURE-  
 (105) FED.LANDS HWY- NOT APPLICABLE 0  
 (110) DESIGNATED NATIONAL NETWORK - PART OF NET 1  
 (20) TOLL- ON FREE ROAD 3  
 (21) MAINTAIN- STATE HIGHWAY AGENCY 01  
 (22) OWNER- STATE HIGHWAY AGENCY 01  
 (37) HISTORICAL SIGNIFICANCE- NOT ELIGIBLE 5

## \*\*\*\*\* CONDITION \*\*\*\*\* CODE

(58) DECK 5  
 (59) SUPERSTRUCTURE 7  
 (60) SUBSTRUCTURE 6  
 (61) CHANNEL & CHANNEL PROTECTION 9  
 (62) CULVERTS N

## \*\*\*\*\* LOAD RATING AND POSTING \*\*\*\*\* CODE

(31) DESIGN LOAD- MS-18+MOD OR HS-20+MOD 6  
 (63) OPERATING RATING METHOD- LOAD FACTOR 1  
 (64) OPERATING RATING- 54  
 (65) INVENTORY RATING METHOD- LOAD FACTOR 1  
 (66) INVENTORY RATING- 32.4  
 (70) BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS 5  
 (41) STRUCTURE OPEN, POSTED OR CLOSED- A  
 DESCRIPTION- OPEN, NO RESTRICTION

## \*\*\*\*\* APPRAISAL \*\*\*\*\* CODE

(67) STRUCTURAL EVALUATION 6  
 (68) DECK GEOMETRY 9  
 (69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N  
 (71) WATER ADEQUACY 9  
 (72) APPROACH ROADWAY ALIGNMENT 8  
 (36) TRAFFIC SAFETY FEATURES 1001  
 (113) SCOUR CRITICAL BRIDGES 8

## \*\*\*\*\* PROPOSED IMPROVEMENTS \*\*\*\*\*

(75) TYPE OF WORK- CODE  
 (76) LENGTH OF STRUCTURE IMPROVEMENT M  
 (94) BRIDGE IMPROVEMENT COST  
 (95) ROADWAY IMPROVEMENT COST  
 (96) TOTAL PROJECT COST  
 (97) YEAR OF IMPROVEMENT COST ESTIMATE  
 (114) FUTURE ADT 28300  
 (115) YEAR OF FUTURE ADT 2025

## \*\*\*\*\* INSPECTIONS \*\*\*\*\*

(90) INSPECTION DATE 05/10 (91) FREQUENCY 24 MO  
 (92) CRITICAL FEATURE INSPECTION: (93) CFI DATE  
 A) FRACTURE CRIT DETAIL- NO MO A)  
 B) UNDERWATER INSP- NO MO B)  
 C) OTHER SPECIAL INSP- NO MO C)





## PROJECT LOCATIONS

Seismic Retrofit  
Dog Creek Bridge  
#06-0027  
and  
Bridge Replacement  
of Sidehill Viaduct  
#06-0042L

02-SHA-5  
PM 45.5  
PM 29.5/30.0  
02-0E090  
02 0000 0016

